P-39/P-400 AIRACOBRA
VS
A6M2/3 ZERO-SEN
New Guinea 1942
V-138
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INTRODUCTION

Two Airacobras from the 8th FG are scrambled from 7-Mile Drome in mid-1942. Behind them, B-26 Marauders from the 22nd BG taxi out prior to taking off.

The clash between the A6M Zero-sen and the P-39 Airacobra over New Guinea in 1942 marks an essential and instructive opening chapter to the limitations of air power in a tropical and expansive environment. The engagements fought out over New Guinea's mountainous spine mostly ended in an evenly balanced stalemate, as much affected by external factors as the quality of the pilots and aircraft themselves. Although Airacobra pilots were officially credited with 95 Zero-sen victories, a comparison against Japanese records shows an actual total of only 15 – a ratio of 6.3 claims per actual kill. The Japanese ratio of claims versus actual kills is similar, although harder to define due to many credits being shared, which was something Allied pilots did not do in New Guinea.

Throughout 1942 the Imperial Japanese Navy Air Force (IJNAF) units in-theater lacked adequate Zero-sen replacements, yet senior officers in Rabaul failed to convince their superiors in Tokyo that they did indeed need more fighters. This unsatisfactory situation meant that until August 1942 replacements averaged only 11 Zero-sen per month – an insufficient number with which to win the war. Although all IJNAF units transmitted bi-monthly reports on their attrition to the General Staff and Aeronautical Department of the Imperial Japanese Navy (IJN), these frequently failed to arrive due to other field demands. All units had a vested interest in accurately reporting their losses in the hope

This A6M3 Model 32 of the 2nd Kokutai was force-landed and abandoned at Buna by WO Kazuo Tsunoda on August 26, 1942 after he had tangled with Airacobras from the 80th FS whilst taking off from the airstrip. The Zero-sen was hit ten times during the engagement.

of gaining replacements. Thus, Japanese unit records from 1942 are detailed, in many cases more so than their Allied counterparts. Against these reports, Tokyo-based staff officers would evaluate unit needs and then make monthly allocations, balancing competing requests from other geographic areas.

There was a two-month time lag between requesting replacements and actually receiving them – another unsatisfactory situation. The last major A6M2 delivery to Rabaul arrived aboard *Kasuga Maru* before the battle of the Coral Sea in May 1942. After the defeat at Midway early the following month, the bulk of Zero-sen production was earmarked for carriers. As an interim measure, 24th Kokusentai in the Marshall Islands was ordered to transfer 25 aircraft, with pilots, to Tainan Kokutai in two echelons (May and September 1942) to make up for production shortages.

Whilst the initial deliveries of P-39 Airacobras to units in New Guinea were equally small, there was no doubt as to the substantive number that the US economy was producing, and which would eventually find their way to the Southwest Pacific theater.

Neither side carried aeronautical charts, for these did not exist for New Guinea at the time. Nonetheless, following the April/May 1942 losses of the equivalent of a squadron of Airacobras to Queensland's marginal weather during delivery, with hindsight it seems incredulous that P-39 pilots were dispatched on the first strike against Lae without maps of any kind. Their Zero-sen counterparts managed superbly with only rudimentary maps, or none at all, the IJNAF aviators quickly familiarizing themselves with New Guinea's geography, which they negotiated skillfully and cautiously.

Reliable construction of runways and the maintenance of aircraft and equipment in New Guinea's brutal environment were essential for the successful prosecution of this fledgling campaign. At Port Moresby the bulldozer and Marston matting proved the quintessential combat tools. Engineers kept the town's expansive airfield complex open, rain or shine, raid or none. At Lae, the forward IJNAF Zero-sen airfield, the Japanese were reduced to repairing their frequently bombed runway with shovels. This substandard state of affairs led to unnecessary losses of priceless fighters. Despite the incessant bombing of Lae, the nearby Neuendettelsau Lutheran Mission airstrip built

This P-400, probably from the 35th FG, is refueled between sorties to Buna on July 27, 1942 at 7-Mile Drome. When this photograph was taken, all serviceable aircraft at Port Moresby had been tasked with countering the Japanese landing that had taken place at Buna six days earlier. At least one of the groundcrew is carrying a sidearm and tin helmets can also be seen just in case the IJNAF mounted a surprise air raid on the base.

in 1935 was not redeveloped by the Japanese until early 1943, at which point it was renamed Malahang. The availability of a second airfield the previous year would have appreciably increased the Zero-sen sortie rate. The failure to develop Malahang can be largely attributed to a lack of construction equipment. Nonetheless, Nos. 7 and 14 Setsueitai (construction units) performed well given the limitations of their inventories.

For both sides, poor food quality portended health issues and limited pilot effectiveness. Lae, in particular, proved a cesspool for disease, a situation exacerbated by Allied bombings. Aside from malaria and dengue fever, the insidious threat of tuberculosis also loomed. Widespread dysentery squandered pilot effectiveness, as did deficiency disorders – including weight loss, muscular weakness, sensation disturbance, edema of extremities and skin lesions – that arose through lack of vitamins.

The initial high combat losses depressed the morale of the Airacobra pilots. To counter this, they played volleyball and, like their Japanese counterparts, held chess tournaments. Mostly, however, they waited near the alert shack in which a blackboard listed flight leaders and aircraft assignments. A field telephone would ring, and whoever answered it would shout "Scramble." Trucks and jeeps would collect the pilots, who would then jump off and run to their dispersed Airacobras. Much kudos is due the Australian spotter network whose warnings presaged most Japanese air raids, proving a force-multiplier that went some way to countering the Airacobra's poor rate of climb.

An exceptional characteristic of the Zero-sen flyers the US Army Air Force (USAAF) pilots were engaging was their tenacity – a result of rigorous training and ingrained warrior ethos. This quality was exemplified by the consistent brazen low-level fighter sweeps performed against Port Moresby airfields. The reality of the damage inflicted by these raids was minimal, and the strafing runs were often checked by effective anti-aircraft (AA) fire. During the earlier Philippines and Dutch East Indies campaigns, the Zero-sen units had obtained more effective results from strafing, thus the same pilots expected similar results in New Guinea. The IJNAF lacked the pervasive, adequate, early-warning system that the Allies enjoyed, leading to insufficient time to intercept intruders. Instead, Zero-sen pilots were often sent aloft too late, leaving them to vainly climb in pursuit of enemy aircraft after they had delivered their attacks unmolested.

Replacing Zero-sen pilots, in most cases exponentially more experienced than their US counterparts, was challenging. The limited number of serviceable fighters prevented newly arrived pilots from accruing much-needed experience. In the first months of their New Guinea war, "green" pilots fresh from flight training were gradually assigned to the various Tainan shotai led by veterans, then rotated through Lae to garner experience. In later months it was deemed too risky to commit inexperienced Zero-sen pilots to the combat zones of Lae and Buna, so they flew benign patrols over Rabaul instead.

Airacobra commanders deserve high marks for improvising operations and maintaining morale and discipline in the face of constant attack. The chasm in aeronautical skills between the combat veterans flying the Zero-sen and "green" Airacobra pilots was wide at first. Royal Australian Air Force (RAAF) Kittyhawk pilots who had survived their engagements with the IJNAF's outstanding fighter in the defense of Port Moresby passed on their hard-earned experience to the incoming Americans. Lacking formal tactics, the Kittyhawk pilots had worked out for themselves that the best way to escape the attentions of a Zero-sen was to "bunt" their fighter – push the nose down – and accelerate away. This tactic proved to be both sound and sensible, saving lives and aircraft. The Allied maxim of the time, "Never dogfight a Zero," was duly impressed upon the American aviators.

Although the Airacobra pilots of the 8th and 35th Fighter Groups had indeed drawn a daunting first assignment when they arrived in New Guinea in early April 1942, they acquitted themselves well against a tactically superior enemy.

Japanese war correspondent Hajime Yoshida took this photograph of Tainan Kokutai Zero-sen taxiing at Lae in late May 1942. He was looking eastwards over Huon Gulf at the time, with the wrecked prewar hangar that was previously used by Guinea Airways visible in the background. This structure was subsequently patched up and used as a workshop by IJNAF groundcrew. All the fighters are equipped with centerline drop tanks, capable of carrying 330 liters of fuel. The A6M2's internal tanks had a capacity of 518 liters.

CHRONOLOGY

1935

July 10 — Bell Aircraft Corporation established.

1938

April 6 — First flight by the XP-39 Airacobra.

1939

April 1 — First flight by the Mitsubishi 12-Shi Carrier Fighter.

1940

July — First Zero-sen combat missions over China.

1942

February 20 — First Airacobras arrive for assembly in Australia, unloaded from SS *Mormac Star* in Melbourne.

March 21 — RAAF Kittyhawks arrive to defend Port Moresby.

March 22 — First Zero-sen shot down in New Guinea.

April 1 — 4th Kokutai Zero-sen detachment ordered to amalgamate with the Tainan Kokutai.

April 5 — First Airacobras arrive in Port Moresby, followed the next day by the first Airacobra combat engagement in New Guinea.

April 14 — First Tainan Kokutai Zero-sen deploy to Lae.

April 26 — Seven Airacobras lost on delivery flight from Australia to New Guinea.

This 40th FS P-400 with a red tail tip and spinner is parked at the southern-most end of 7-Mile Drome in July 1942, looking north. Initially, the 35th FG was exclusively equipped with the P-400.

Tainan Kokutai A6M3 Model 32 tailcode V-187 (built by Mitsubishi in June 1942), assigned to the 2nd chutai, was captured at Buna by Allied troops on December 27, 1942. The Buna detachment implemented its own separate markings system.

April 30	First offensive Airacobra mission in New Guinea, against Lae/Salamaua.
May	24th Kokusentai in Marshall Islands transfers 25 Zero-sen with pilots to the Tainan Kokutai.
May 1	Five Airacobras lost on delivery flight from Australia to New Guinea.
May 15	USAAF Pursuit Squadrons redesignated Fighter Squadrons (FS).
May 17	Three Tainan Kokutai pilots allegedly perform aerobatic routines over Port Moresby, termed a "danse macabre" in postwar publications. However, this event is fiction.
June 2	39th FS Airacobras arrive in Port Moresby.
June 25	Largest Zero-sen versus Airacobra dogfight in New Guinea.
June 26	39th and 40th FSs arrive in Port Moresby to relieve the 35th and 36th FSs.
July 20	80th FS Airacobras arrive in Port Moresby, followed by 41st FS Airacobras a few days later.
July 21	Japanese South Seas Force lands at Gona in Operation "*RI Sakusen*."
July 23	Construction of Buna airfield commences.
July 29	First A6M3s delivered to New Guinea are unloaded at Rabaul.
July 30	8th Service Group arrives in Port Moresby to assist the 35th Service Squadron in maintaining Airacobras in-theater.
August 7	Guadalcanal campaign commences, diverting New Guinea Zero-sen to new theater.
August 15	39th FS returns to Australia to re-equip with P-38 Lightnings, its Airacobras being redistributed among remaining units still in-theater.
August 18	First Zero-sen lands at Buna.
September 7	Last Zero-sen combat over Port Moresby.
September 21	35th and 36th FSs deploy to Milne Bay.
October	Many Fifth Air Force P-400s overhauled and sent to Guadalcanal to serve with Thirteenth Air Force.
November	Surviving Tainan Zero-sen pilots return to Japan from Rabaul.
November 1	IJN restructures and renames its aerial units.
November 8	41st FS deploys to Milne Bay.
December 7	Last 1942 Zero-sen versus Airacobra combat in New Guinea.

DESIGN & DEVELOPMENT

BELL P-39/400 AIRACOBRA

The Bell Aircraft Corporation was founded on July 10, 1935 by designer Larry Bell, who had constant trouble capitalizing his projects, giving him life-long health problems. The XP-39 Airacobra was created by Bell's gifted designer Robert Woods, the prototype first flying on April 6, 1938. The fighter's clean lines, tricycle landing gear and futuristic looks immediately made it controversial. The XP-39's car doors and mid-fuselage placement of the Allison engine, which drove a three-bladed propeller via a ten-foot shaft, were also quite quirky. The nose contained two Browning 0.50-cal machine guns with interrupter gear and a 37mm M4 (known as the T9 during development) cannon, firing through the propeller hub. As originally conceived, the P-39 Airacobra had the potential to become a high-performance fighter. However, constant modifications added weight to the airframe, and with no commensurate increase in horsepower, this path guaranteed poor performance, especially at higher altitudes.

The aircraft's Allison V-1710 engine was started by the pilot pressing his heel on the energizer which wound an inertia starter. When the whine was sufficiently loud, the pilot rocked his toe onto the engager, shaking the fighter as the massive propeller suddenly turned and then caught. The sleek Airacobra had other eccentricities. Its high-performance wing combined with rear center of gravity meant it was difficult to recover from a spin, particularly in instrument conditions.

Although the USAAF regarded the P-39 as useful primarily for ground support, in New Guinea throughout 1942 it was forced into the role of fighter. At 18,000ft the Airacobra's rate of climb fell away dramatically, although belly tanks increased its range. The fighter's throat mikes were uncomfortable, and pilots soon learned that the armored-glass plate directly in front of them badly fogged up during rapid descent. The P-39 made a distinct whistling noise when it landed after firing its guns, caused by the protective tape having been blown off the muzzles. A final quirk was that pilots normally entered and exited via the starboard door, as the throttle quadrant impeded exit from the other side.

An Allison V-1710 is carefully fitted into a P-39D on the Bell production line in Buffalo, New York. This 12-cylinder glycol-cooled V12 engine, in six slightly different sub-variants, was the Airacobra's only powerplant throughout its relatively brief service life.

Bell's contentious fighter was mass produced for three years from 1941 until 1944. American pilots lent it harsh myths and falsehoods that survive to this day, and the Airacobra also acquired several unkind sobriquets, including "Iron Dog." The P-39D was the first mass-produced model, followed by the P-39F that had an Aeroproducts (instead of Curtiss) propeller and a pair of 12-stub exhausts first seen on export Airacobras.

The 37mm M4 cannon soon proved ineffective in combat due to its slow rate of fire and curved trajectory. By then, an export model fitted with the M1 20mm cannon (a license-built version of the Hispano Mk I weapon) and six Browning 0.30-cal machine guns (the United States Army Air Corps' (USAAC) P-39 had two nose-mounted 0.50-cals and four 0.30-cals in the wings) was in production for the Royal Air Force (RAF), but it was soon rejected by the British. Christened the Airacobra I by the RAF and redesignated the P-400 by the USAAF, many found their way into the New Guinea inventory. This resulted in the common maxim that "a P-400 was a P-39 with a Zero on its tail." Nonetheless, the P-39 and P-400 had formidable firepower, giving the fighter potency in skilled hands. After the Airacobra's less-than-stellar introduction to combat, Bell admitted that its performance figures for the fighter had been based on the unarmed and unequipped XP-39 prototype, which weighed nearly a ton less than an operational P-39D when fueled and armed.

Whilst the Airacobra and Model 21 Zero-sen were fundamentally the same size, key differences emerge in their performance as a result of the Bell fighter's weight issues. Both models of the Airacobra, the P-39 and P-400, were underpowered, and thus had a poor rate of climb. Despite the addition of an optional fuselage drop tank, their range was also poor. At 18,000ft, the fighters' rate of climb fell away dramatically, although the belly tank did give the pilot a marginal safety endurance over New Guinea's unforgiving mountainous terrain. The same underfuselage hard-point that carried the drop tank could also have a 500lb bomb attached to it – admittedly of little use in aerial combat. Armor plating provided limited protection to the front and rear of the pilot.

P-39D-1 AIRACOBRA

It is a common myth that Airacobra types can be discerned by their exhaust stacks – 12 stubs for the P-400 and six for the P-39 – alongside whether a 20mm (P-400) or 37mm (P-39) cannon muzzle protrudes from the nose. This simple assessment is wrong. Whilst all P-400s had the 20mm cannon and most P-39Ds carried the 37mm cannon, several batches of the P-39D-1 and P-39F reverted to the Hispano weapon. Similarly, the initial batch of P-39D-1s built by Bell was fitted with the export version of the V-1710-E4 (the engine installed in the P-400), which had 12 exhaust stacks, as opposed to the V-1710-63 that powered the USAAF variant. Furthermore, both engines could be, and were, swapped over in the field for repair and overhaul purposes.

A positive way to identify a P-400 is by the tubular strut reinforcement carry-through that appears at the top of the canopy, as opposed to the clear canopy fitted to P-39D/F. However, this feature is rarely discernible in wartime photographs. Finally, P-400s sported the unique RAF Dark Green and Dark Earth camouflage over US Sky Gray that had been applied in the factory by Bell using its own equivalent shades. Exposure to frontline conditions often blurred this rudimentary way of determining provenance. Eventually, P-39D-1s ordered as RAF P-400s but issued to the USAAF were painted Olive Drab overall.

Initially, the 8th Pursuit Group (PG) flew P-39D/Fs, whilst the 35th PG (previously the 31st PG) arrived in Australia without a Headquarters Squadron and was exclusively equipped with P-400s. Following combat and operational losses from June 1942 onwards, and the arrival of P-39D-1s from August 1942, the 8th and 35th FGs' inventories became mixed. Later on the 8th FG (all pursuit groups had become fighter groups on May 15, 1942) withdrew all of its 37mm cannon-equipped P-39Ds from operations due to the weapon's unreliability.

Following the seminal month (May 1942) of aerial combat over New Guinea, several Airacobra pilots submitted summary combat reports that illuminated the comparative performance of their fighter versus the Zero-sen. At one stage Capt Paul Brown chased a Zero-sen at 12,000ft, noting "He nearly stayed away from me at 350mph." From a later low-level action 1Lt Francis Royal stated "I indicated 320mph straight and level at 1,000ft. Zero kept me in range." 2Lt John Price submitted "Zero stayed with the Airacobras. I dived from 12,000ft, indicating 450mph, and a Zero stayed with me and followed me to ground level, firing," and another unnamed pilot reported, "we were barely able to out-speed them at 10,000ft. We were indicating about 350mph in a very slight dive. Their probable speed was 340mph." Post-mission analysis of the first strike of April 26, 1942 concluded that when the Airacobras tried to turn with the enemy, the Zero-sen "didn't lose a beat" in getting on their tails.

USAAF pilots concurred, however, that the Airacobra was generally as fast as the Zero-sen, and if necessary could dive away from it. Everyone agreed that the Zero-sen climbed more quickly, thus gifting the Japanese the essential advantage of height.

OPPOSITE

P-39D-1 41-38359 was originally assigned to 2Lt Irving Erickson (who christened it *Leura*) of the 36th FS/8th FG at 7-Mile Drome in April 1942, before it was transferred to squadronmate 1Lt George "Wheaties" Welch as a replacement for D-1 41-38345. Renaming it *MISS HELEN the FLYING JENNY*, Welch was at the controls of this Airacobra one year to the day after the attack on Pearl Harbor when he claimed two D3A1 "Vals" and an A6M Zero-sen northeast of Buna on December 7, 1942. These claims made him the 8th FG's first ace, for he had previously claimed four victories during the Pearl Harbor attack whilst flying a P-40B.

At 7-Mile Drome, 35th FS pilot Capt Hervey Carpenter (far left) showcases the flying gear worn by a typical New Guinea Airacobra pilot, including a Pioneer Parachute Company Inc. AN6510-1 seat parachute.

MITSUBISHI A6M ZERO-SEN

When aircraft designer Jiro Horikoshi completed work on the first-generation Zero-sen, an air war involving his fighter in combat against US aircraft was not foremost in his mind. He had created the Zero-sen to meet the demands arising from the air war over China, where it was tested and quickly proved itself against Soviet Polikarpov mono- and biplane fighters. In his autobiography, Horikoshi recalls being caught by surprise when the war erupted in the Pacific, stating that he did not anticipate the Zero-sen having to fight in this vastly different theater. Nevertheless, the 12-Shi Carrier Fighter quickly evolved into the A6M2 Model 21, which was the most ubiquitous model to appear in the skies over New Guinea. As in other theaters to which the Zero-sen was committed, the Mitsubishi fighter soon gained a reputation for being a dependable warhorse. In 1942 the aircraft represented cutting-edge technology and proved surprisingly adaptable to land-based operations (as the A6M had done in China in 1940–41), whilst keeping its carrier features, including the tailhook.

The A6M2's Nakajima Sakae-12 engine with a single-stage supercharger proved reliable. Thanks to the latter, Zero-sen could approach targets at 20,000ft with ease, and they could climb up to 30,000ft if required. The fighter's ventral drop tank extended its range, enabling a combat radius of more than 500 miles when flying from a land base. This was a versatile attribute, but also one that proved fatiguing for pilots. The Zero-sen's Achilles heel was its lack of self-sealing tanks – a universal flaw in Japanese aircraft design of the period which meant that one incendiary bullet could, and often did, destroy a Model 21 quickly and spectacularly. Under the increasing duress of Allied bombing attacks in New Guinea, IJNAF engineers nonetheless managed to conduct routine inspections of A6Ms after every mission, perform 300-hour servicing that took a whole week to complete, and undertake 400-hour major engine inspections that subjected the Sakae-12 to a ten-day overhaul.

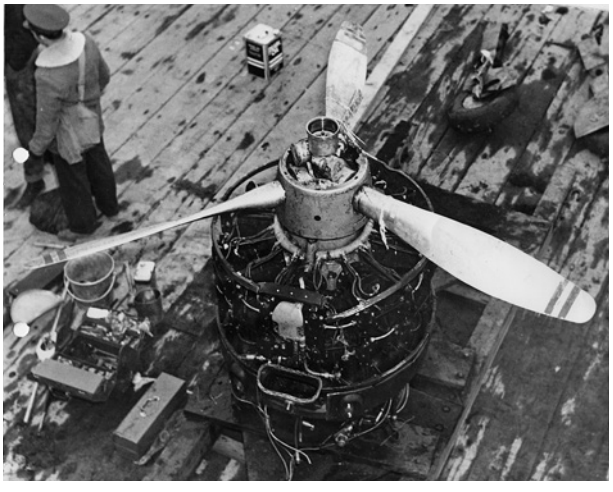
The Sakae-12 proved so reliable that there is not one example of the Tainan Kokutai losing a Zero-sen to straightforward operational engine failure. This was just as well, for although the Model 21 was – like its Airacobra counterpart – relatively easy to service, and IJNAF engineers proved skilled at maintaining their mounts, they were hampered by crude support facilities and suffered more from aerial attacks on their airfields than the Americans did.

The factory-installed radio system in the Model 21 included both the Type 96 radio and the Type 1 Radio Compass, with the transmitter and receiver being separate units hung in bungee cord shock-mounts that provided a simple but effective protector. The radios were removed by Tainan Kokutai pilots shortly after arriving

Gifted engineer Jiro Horikoshi (third from right) poses with other members of the team from Mitsubishi Heavy Industries that would subsequently design the Prototype 12-Shi Carrier Fighter for the IJNAF. Their aircraft duly evolved into the A6M Zero-sen. This photograph was taken in July 1937 at around the time Horikoshi was asked to design the new fighter, despite his previous aircraft, the A5M "Claude," having only just entered service. Behind the engineers is a Ki-15 reconnaissance aircraft under construction, this type, subsequently codenamed "Babs" by the Allies in World War II, being designated the C5M in IJNAF service.

at Lae due to their unreliability, however. The hindrance to the effectiveness of what had seemed to be a well-designed system was caused by poor shielding and grounding, particularly from the engine's dual ignition system. Static charge generated by movement of the airframe through the atmosphere exacerbated the radio's problems.

Unlike USAAF groundcrews in-theater, IJNAF engineers failed to innovate in an attempt to improve the Zero-sen's poor radio reception – an issue that their American counterparts would likely have found a way to solve. With no technical officers with sufficient expertise on hand to rectify matters, these problems quickly led to the radios' removal, forcing Zero-sen pilots to resort to traditional visual methods of communication. IJNAF fighters lacked radios in-theater well into 1943, thus limiting airborne tactical control options. This abdication of the radio communications sets plagued New Guinea Zero-sen operations throughout the campaign.



The compact Nakajima Sakae-12 radial engine, with a single-stage supercharger, was rated at a modest 950hp–375hp less than the Airacobra's V-1710.

As previously noted in the Introduction to this volume, the Model 21 was exponentially more maneuverable than the Airacobra, particularly at lower altitudes. However, the inability of early Zero-sen to maintain a high roll rate at speeds in excess of 230mph soon led to the adoption of external mass balances with the Model 21. Commencing with the 326th airframe, these were replaced by a static compensation device buried in the aileron leading edge – a design feature incorporated in all Nakajima-manufactured Zero-sen. Nonetheless, some of these earlier models found their way into the 1942 inventory.

During the first year of the war in the Pacific, the A6M2 Zero-sen represented cutting-edge technology and, unusually, was adaptable for either carrier or land-based operations. In New Guinea in 1942 the superior experience levels of Japanese pilots enhanced the A6M's comparative performance in combat.

A6M2 HK-535 (tailcode V-158) was photographed at Lakunai, Rabaul, in April 1942. Lt Shiro Kawai is in the cockpit running up the engine while WO Tora'ichi Takatsuka is stood in front of the wing, ready to remove the wheel chocks when the pilot gives him the signal. This aircraft is marked with two yellow command sashes just to the right of the national insignia, these being almost invisible in this black and white shot.

A6M2 ZERO-SEN MODEL 21

TECHNICAL SPECIFICATIONS

P-39 AIRACOBRA

P-39D

The D-model Airacobra was the first fully combat-capable version of the Bell fighter to enter series production, being based on the C-model but with improvements requested by the USAAC following the study of combat reports emanating from Europe. The principal change centered on the provision of an additional 245lb of armored protection for the pilot and key parts of the aircraft. Only 20 of the 80 P-39Cs ordered were completed as such, with the remainder incorporating changes that effectively made them P-39Ds. On September 13, 1940, the USAAC placed its first order for the D-model, totaling 344 aircraft. Examples began to reach frontline units from April 1941. Aside from improved armor, the P-39D differed from the C-model through the fitment of self-sealing fuel tanks (which reduced capacity from 170 to 120 US gallons), a bulletproof windscreen and revised armament.

The 60 outstanding C-models were completed as P-39D-BEs, and they were fitted with a single M4 37mm cannon in the nose, two 0.50-cal machine guns also in the nose and four wing-mounted 0.30-cal weapons. The D-1, which was identical to the D-BE bar the replacement of the M4 cannon with the 20mm M1, was built specifically for delivery to foreign customers under Lend-Lease, although the majority of the 336 produced were retained by the USAAF. As with the D-BE, the D-1 was powered by the V-1710-E4 (or -35 as it was also known) engine rated at 1,150hp.

OPPOSITE

V-153 was previously F-153 during its service with the 4th Kokutai, being assigned to buntaicho Lt Shiro Kawai at Lae in March 1942. The number 153 as applied by the 4th Kokutai featured a thinner calligraphy than the later numerals applied by the Tainan Kokutai. Groundcrew from the latter unit had simply painted out the "F" and replaced it with a "V" at some point in mid-April 1942 following the 4th Kokutai's assimilation with the Tainan Kokutai on the 1st of that month. Kawai continued to regularly fly this Zero-sen from Lae until he received a new A6M2 (with the tail code V-158) at Rabaul in August 1942. The twin yellow sashes and blue fin stripes on this fighter indicate the assigned pilot's senior chutaicho status. Note the darker paint on the fin where the "V" was painted out and two perpendicular stripes on the fuselage that obscured the previous yellow buntaicho markings used by the 4th Kokutai.

A combat-weary 8th FG P-39D undergoes substantive maintenance at 14-Mile Drome, Port Moresby, not far from the Laloki River, in May 1942. All Airacobras in-theater were initially maintained by a small echelon of 100 men from the 35th Service Squadron prior to the arrival of the larger and better-equipped 8th Service Group on July 30, 1942. Lacking servicing stands, groundcrew have employed strategically placed 44-gallon drums in order to carry out work on a problematic rudder hinge. Note also the mechanic bent over the side of the fuselage with his head inside the aircraft tinkering with the engine.

The D-2 saw the return of the M4 cannon, provision for a single belly-mounted 145-gallon drop tank or 500lb bomb and replacement of the V-1710-E4 with the V-1710-63 rated at 1,325hp. Of the 158 examples built, at least 50 were sent to the USSR under Lend-Lease. Follow-on D-3s and -4s had armored oil and glycol radiators and single K-24 and K-25 cameras installed in the rear fuselage to give them a photo-reconnaissance capability. Neither model was built in large quantities.

By the time production of the D-model had ended in 1942, 923 examples had been completed for the USAAF and Lend-Lease customers.

P-39F

An increasing number of F-model P-39s began to appear in New Guinea towards the end of 1942 after this variant replaced the D-model on the Bell production line. The

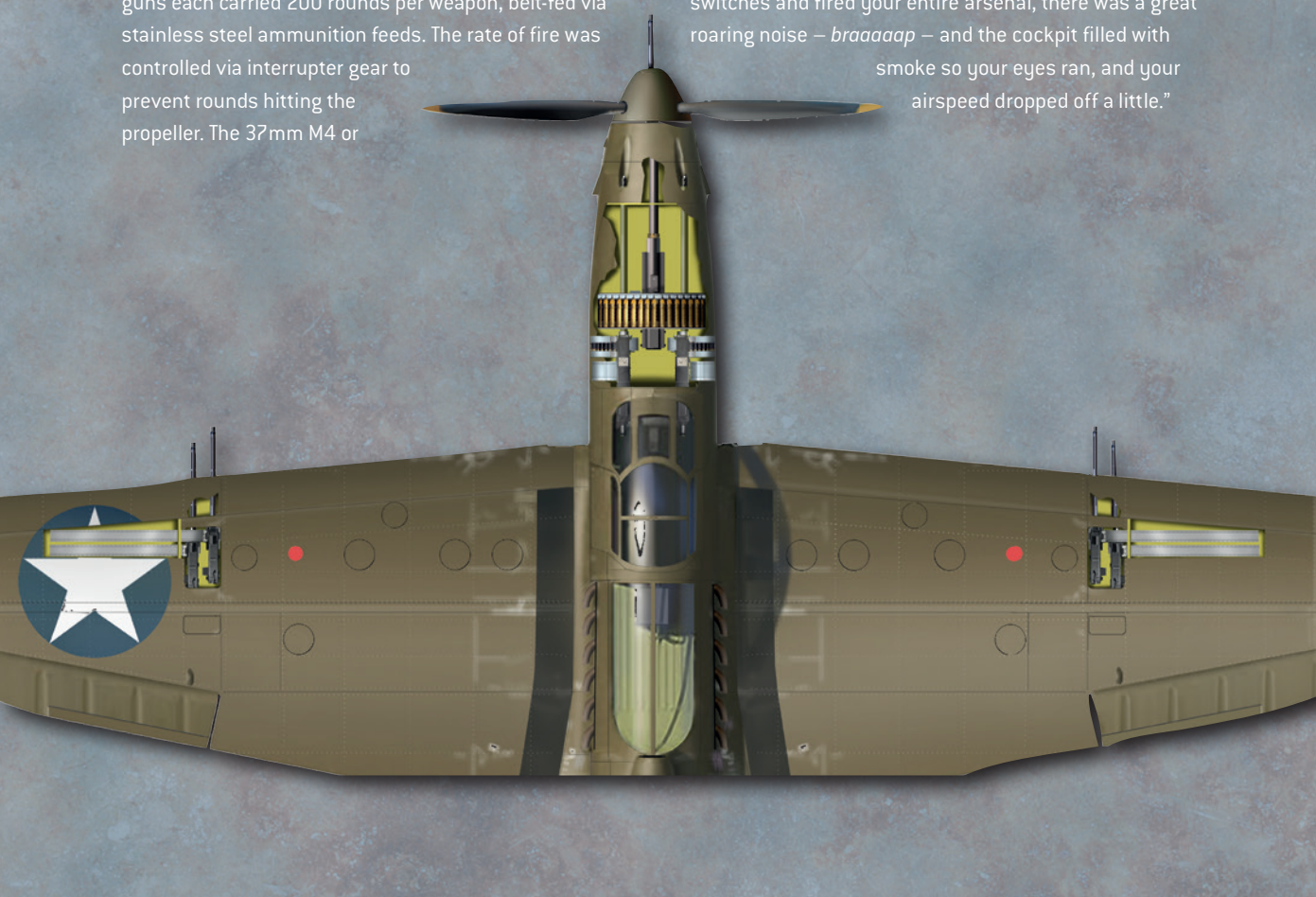
P-39F-1 41-7205 was photographed at Townsville, in Queensland, in late 1942 following a thorough overhaul and immediately prior to returning to New Guinea for further service in the frontline. The red circles within the national insignia on the fuselage and beneath the starboard wing have been painted out to avoid confusion in combat with the Japanese hinomaru – the order to remove the red disc was issued in May 1942. The fighter has been fitted with a 145-gallon drop tank for its flight back to Port Moresby.

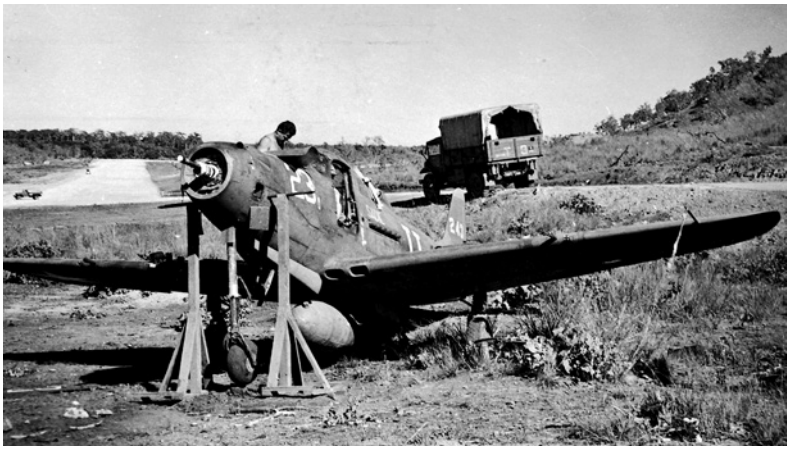
F-model differed from the P-39D by using an Aeroproducts constant-speed hydraulic three-bladed propeller instead of a Curtiss Electric unit, whilst its V-1710-63 engine was fitted with a pair of 12-stub exhausts, rather than twin six-stubs as seen on the D-1 and D-2. As noted in the previous chapter, the exhausts and engines were routinely swapped between D- and F-models (and P-400s) once in New Guinea. Like the P-39D and P-400, the F-model was still plagued by such deficiencies as a lack of high altitude gun heaters and gun hydraulic chargers, and oil continued to seep over the canopy from the propeller gearbox.

Production of the P-39F-1 totaled 229 aircraft, 27 of which were later converted into camera-equipped F-2s with additional belly armor.

P-39D/F AND P-400 AIRACOBRA ARMAMENT

The Airacobra's four wing-mounted 0.30-cal M2 AN Browning machine guns, with 250 rounds per weapon, were installed in the outer wings to avoid the propeller arc. The guns were slightly staggered laterally in their mounts to ease ammunition feed via elongated stainless steel belts and storage within the wings for the metal ammunition boxes. The Airacobra's pair of nose-mounted 0.50-cal M2 machine guns each carried 200 rounds per weapon, belt-fed via stainless steel ammunition feeds. The rate of fire was controlled via interrupter gear to prevent rounds hitting the propeller. The 37mm M4 or 20mm M1 nose cannon fired through the spinner hub, and thus required no interrupter gear. Its ammunition was fed by circular stainless steel guides, and feed jams were commonplace during the early stages of the campaign until field modifications all but eradicated the problem. P-39 pilot Edwards "Ted" Park of the 41st FS/35th FG noted in his autobiography *Nanette*, "When you flipped on all three gun switches and fired your entire arsenal, there was a great roaring noise – *braaaaap* – and the cockpit filled with smoke so your eyes ran, and your airspeed dropped off a little."





P-39K 42-4345 *SADIE*, assigned to 40th FS pilot 2Lt William McDonough, suffered a mishap at Bomana Drome in December 1942. The fighter has been propped up on wooden stands via a metal rod passed through the forward fuselage in order to take the weight off the nose gear. The Airacobra's constant-speed hydraulic three-bladed propeller is conspicuous by its absence, having possibly been damaged in the accident that befell *SADIE*. Undercarriage collapses were commonplace on the rough taxiways and runways hastily carved out of the jungles of New Guinea.

P-39K

A handful of brand new K-model Airacobras were issued to the 35th FG's 41st FS as attrition replacements in early December 1942, this version being nearly identical to the P-39D-2. Fitted with a V-1710-63 engine driving an Aeroproducts propeller, the fighter boasted the M4 cannon firing through the hub, two 0.50-cal machine guns in the nose and four wing-mounted 0.30-cal weapons. To improve the ventilation in the cockpit after the nose-mounted weapons had been fired, the K-model featured additional vents in the forward fuselage. A total of 210 P-39Ks were built, six of which were fitted with additional belly armor and two cameras in the rear fuselage.

P-400

The British Purchasing Commission had placed an order with Bell for its Model 14A (the company designation for the Airacobra) as early as April 13, 1940 after being suitably impressed by the manufacturer's optimistic performance figures for its XP-39 prototype – Bell claimed that these would be indicative of those achieved by combat-capable examples in frontline service. Originally to be called the Caribou I, the RAF Airacobra I was virtually identical to the P-39D-1, featuring the V-1710-E4 engine, long-barreled 20mm M1 cannon and six 0.30-cal machine guns. No fewer than 675 examples were ordered, with the first aircraft to reach Britain commencing flight testing with the Fighter Development Unit (FDU) at Duxford from July 6, 1941 and No. 601 Sqn having replaced its Hurricane IICs with Airacobra Is by August of that year.

The exhaustive trials undertaken with the aircraft by the FDU soon showed that although the Airacobra I could out-turn and out-dive a Messerschmitt Bf 109E at altitudes up to 15,000ft, its performance above 20,000ft was "utterly useless."

Furthermore, the fighter's top speed was 33mph slower than advertised by Bell. A further 19 serious deficiencies were also noted, resulting in the Airacobra I being hastily withdrawn from frontline service by the RAF following only two sweeps over occupied France.

More than 200 of the now unwanted aircraft were subsequently supplied to a grateful USSR as part of British aid to the Soviet Union, and a similar number were eventually handed over to the USAAF's Eighth Air Force following its arrival in Britain in the summer of 1942. A further 179 Airacobra Is that had yet to be delivered to the RAF were acquired by the USAAF following the surprise attack on Pearl Harbor by the IJNAF on December 7, 1941. These aircraft, retaining their RAF serial numbers and redesignated as P-400s, were in turn rushed overseas to bolster the defenses of northern Australia and New Guinea.

BOTTOM LEFT
Having had its fuel tanks replenished, a P-400 sits ready to depart Rorona airfield in mid-1942. Sited approximately 30 miles northwest of Port Moresby, Rorona was primarily used as an emergency strip. A Kittyhawk IA from No. 76 Sqn can just be seen behind the fighter.

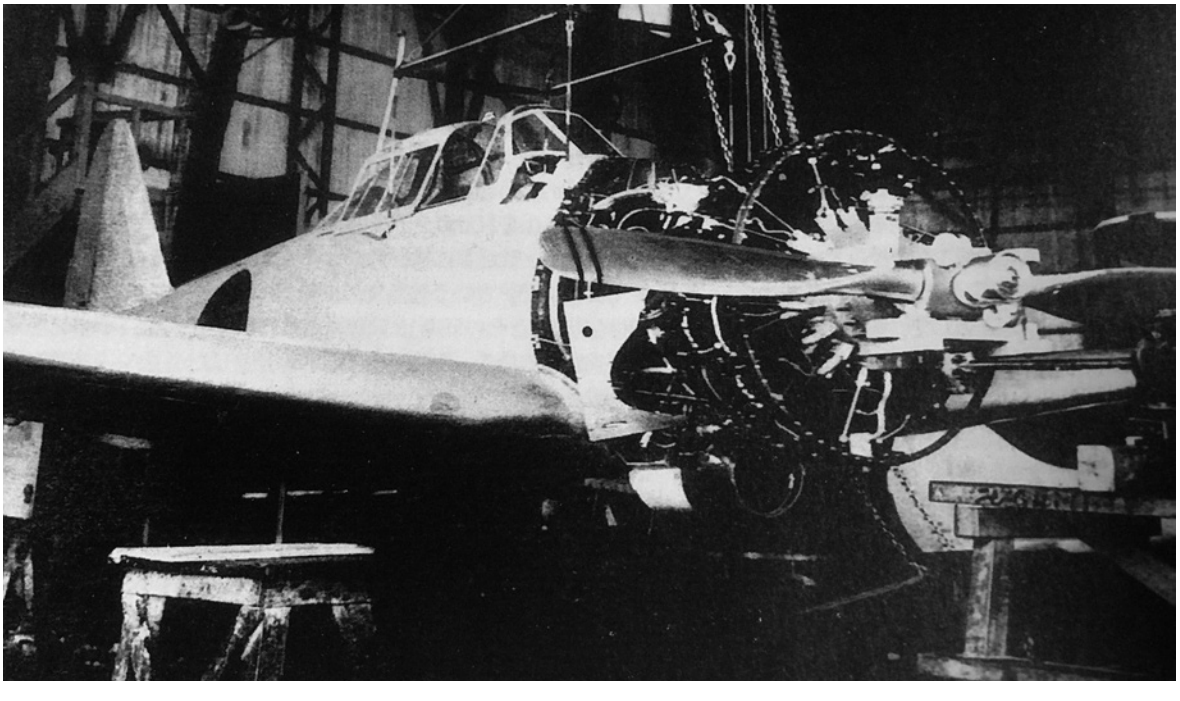
A6M ZERO-SEN

A6M1

The first two prototypes of the Zero-sen were initially referred to as 12-Shi Carrier Fighters, but they eventually became A6M1s. The prototypes were powered by the Mitsubishi Zuisei-13 engine with a rating of 875hp.

The A6M1 set the basic configuration of the Zero-sen. Its fuselage was built in two sections, with the forward part being attached to the wing structure – the top of the wing served as the cockpit floor. While building the wing and forward fuselage as one integral section saved weight, it made construction more time-consuming and repair

The first prototype A6M1 (then known as the 12-Shi Carrier Fighter) nears completion in the Mitsubishi Aircraft Company factory in Nagoya in mid-March 1939. Fitted with a Mitsubishi Zuisei-13 engine rated at 875hp and driving a two-bladed variable pitch propeller, the aircraft made its first flight on April 1, 1939 from Kagamigahara airfield with Mitsubishi Chief Test Pilot Katsuzo Shima at the controls.



The A6M2 had two Type 99-1 20mm cannon installed in the wings. Based on the Oerlikon FF, this was an exceptionally light weapon, but had a low rate-of-fire and a low muzzle velocity. IJNAF fighter pilots also complained about the limited amount of ammunition carried in the Zero-sen's wing magazines – each weapon fitted in the Model 21 had a drum housing just 60 rounds, which gave less than ten seconds worth of firing time at a rate of around 540 rounds per minute. With the A6M3 Model 32, the belt-fed magazines contained 100 rounds per gun.

and maintenance more difficult. If part of the wing received major damage it had to be replaced in its entirety. The forward fuselage section ended at the aft end of the cockpit canopy and the trailing edge of the wing, the rear fuselage section beginning at this point. Both forward and rear sections were built using stressed-skin, semi-monocoque construction. The wings contained two 51.5-gallon fuel tanks, with an additional 38-gallon tank placed ahead of the cockpit. The main landing gear, tail wheel and arrestor hook were all fully retractable.

The pilot entered the airplane from the left side of the fuselage via three retractable steps and two handgrips, all carefully fitted for aerodynamic smoothness. Jiro Horikoshi and his team placed the cockpit high on the fuselage to give excellent all-around vision in combat. The cockpit itself was compact. The pilot's seat was adjustable up and down, but not forward – instead, the rudder pedals could be moved forward or backward. The arrangement of the instruments and controls followed conventional practice, with the exception of the gun controls. On the Zero-sen the gun selector and the firing button were placed on the throttle control, not on the control column as in most other fighters.

The armament of the Zero-sen represented a sharp break with tradition. Definition of the requirements for the proposed 12-Shi Carrier Fighter took place at a time when many of the world's air forces were reconsidering the efficacy of the standard armament of two rifle-caliber machine guns – a hangover from World War I. Alternatives then under development were multiple batteries of rifle-caliber machine guns or weapons of a larger size. Recognizing the need for more powerful armament to deal with larger and stronger all-metal airplanes, the IJN's research program led to the decision to bypass the standard 7.7mm machine gun and adapt the 20mm cannon for fitment to the new fighter.

The IJNAF duly purchased a license to build the Oerlikon FF aircraft cannon in Japan. This became the Type 99-1 cannon, which traded a low muzzle velocity and rate of fire for light weight, making it ideal for the planned new carrier fighter. The prototype and production models of the Zero-sen contained a short-barrel Type 99-1 cannon in each wing, equipped with a drum magazine containing 60 rounds of 20mm ammunition. Two 7.7mm machine guns were placed on the top of the fuselage to fire through the propeller, each gun having a magazine containing 500 rounds of ammunition. A selector switch on the throttle enabled the pilot to fire the machine guns or the cannon separately, or all four weapons together.

Although clearly less powerful than the 20mm cannon, the 7.7mm machine guns were still considered to be valuable for close-in fighting, where a Zero-sen pilot could use his airplane's superior maneuverability to close with his opponent to deliver a telling strike against the pilot or the fuel tanks of the enemy fighter. The greater explosive power of the 20mm cannon would enable the Zero-sen to deal effectively

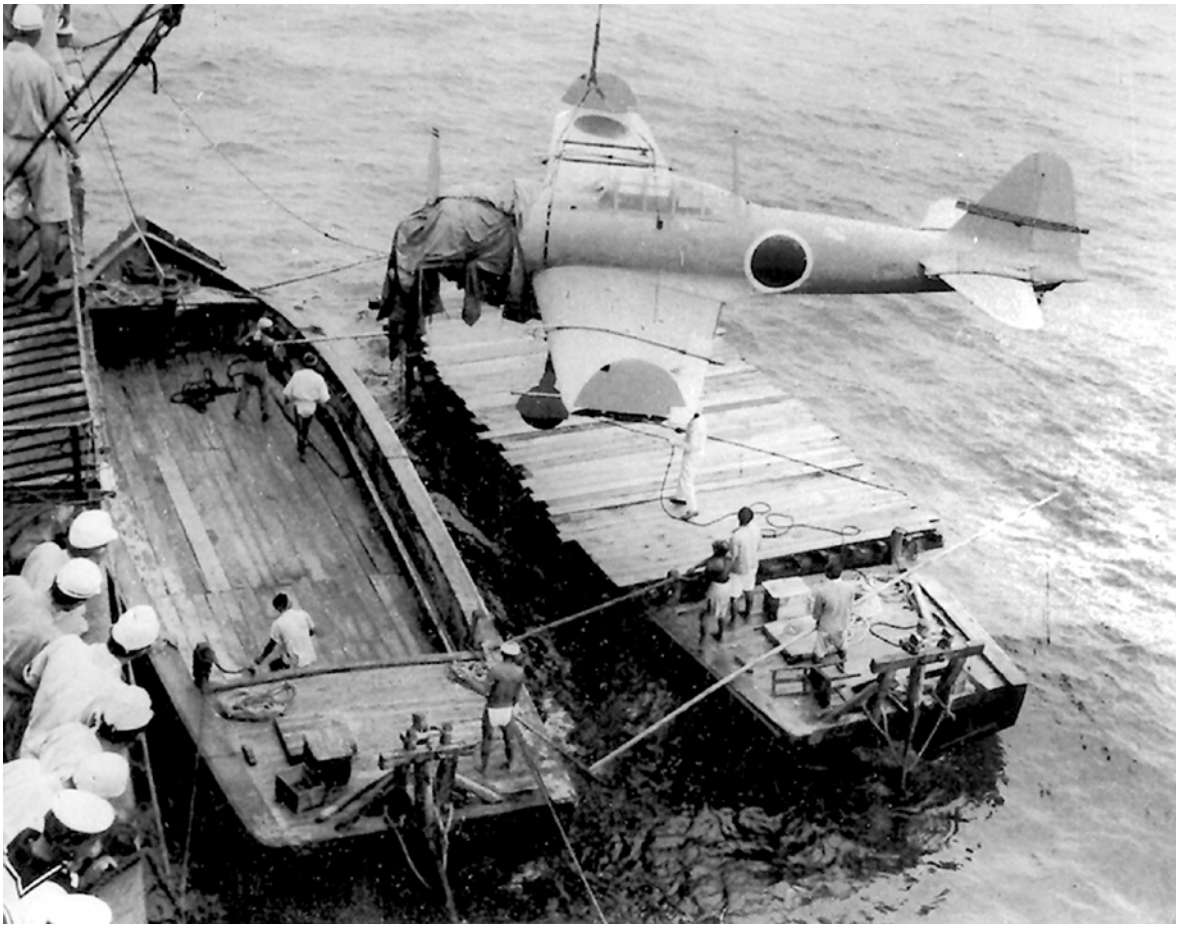
with larger aircraft threatening the fleet. This seemingly powerful armament proved to be less effective in combat than the IJNAF had hoped, however.

A6M2 MODEL 11

Adoption of the more powerful Nakajima Sakae-12 engine for the production versions of the A6M led to a change in designation to A6M2. With the Sakae engine, the maximum speed increased to 331mph. The A6M2 incorporated several minor modifications. Moving the vertical tail farther aft added 11 inches to the length of the fuselage, while the span of the horizontal tail surfaces was increased by four inches and raised 7.4 inches above the fuselage centerline. The air scoop for the Sakae engine's carburetor was relocated to the bottom of the engine cowling – a distinctive feature of the A6M2.

After the IJNAF's formal acceptance of the A6M2, the new fighter became the Type 0 Carrier Fighter Model 11, shortened to Reisen (Zero-sen Fighter). The first digit in the model number indicated changes in the airframe and the second digit changes in the engine. Mitsubishi built 64 Model 11 fighters.

The Model 11 was the first version to see combat when 15 aircraft were sent to the 12th Kokutai for operational testing. Additional Model 11s were sent to China to augment the IJNAF's fighter force, operating from land bases.



Its wingtips carefully folded up, a brand new Nakajima-built A6M2 Model 21 is slowly lowered onto a lighter off Truk from the auxiliary transport *Mogamigawa Maru* in late August 1942. Nakajima had started applying the white surround to the fuselage hinomaru before the aircraft left the factory from August of that same year. The fighter was flown down to Rabaul for the Tainan Kokutai shortly thereafter.

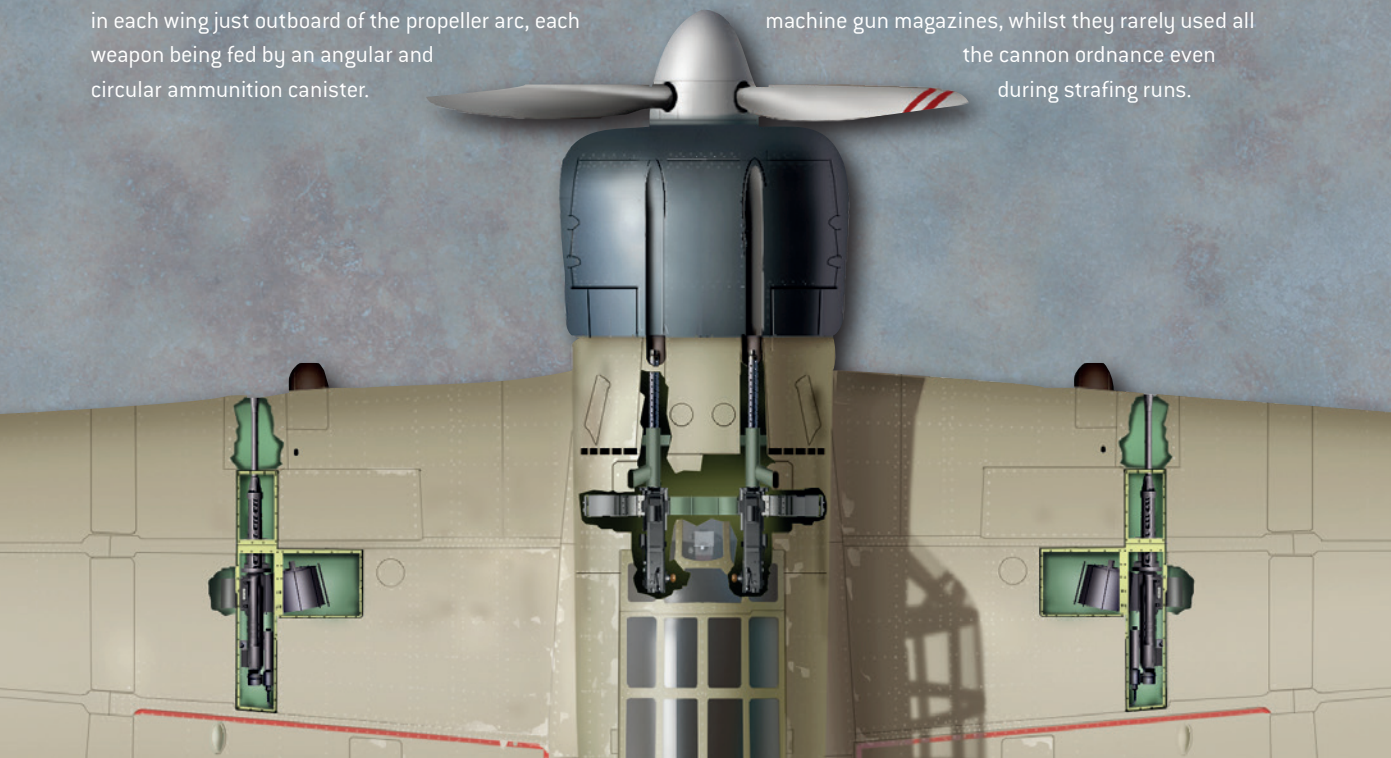
A6M2 MODEL 21

Carrier trials apparently indicated that even though the Zero-sen was within the specified wingspan, the airplane was a tight fit on the standard aircraft carrier elevator. To remove the chance of accidental damage to the wings, Mitsubishi designed a simple mechanism to fold the outer 20 inches of the wing vertically, reducing the wingspan to just under 36ft. The IJNAF rejected the idea of incorporating a greater degree of wing folding due to the weight penalty it would have imposed. The modified wing configuration led to a change in model number, the revised airplane becoming the Model 21. The Type 0 Model 21 replaced the A5M Type 96 Carrier Fighter within IJNAF carrier- and land-based air groups as production at Mitsubishi and Nakajima increased. Ironically, the Nakajima Company would ultimately build more Zero-sen than Mitsubishi.

A6M2 ZERO-SEN MODEL 21 ARMAMENT

The Model 21 Zero-sen was armed with two Type 97 7.7mm machine guns (based on the British Vickers machine gun) in the upper fuselage decking, these weapons being synchronized to fire through the propeller. The guns were manually charged by the pilot, who was usually able to clear the weapon if stoppages eventuated, which was rare. Ammunition boxes on either side of the Type 97s carried 500 rounds per gun. The Model 21's split cowl had stamp-pressed recesses to cater for the protruding barrels of both guns, whose rate of fire was controlled by interrupter gear. One Type 99-1 20mm cannon was mounted in each wing just outboard of the propeller arc, each weapon being fed by an angular and circular ammunition canister.

Although these heavier-caliber weapons did not protrude from the wing, during a head-on attack or strafing runs their muzzle flash was highly visible. The cannon had a relatively slow maximum cyclic rate of fire of 490 rounds per minute, with each ammunition canister holding just 60 rounds per gun. From IJNAF reports it is clear that most victories against Airacobras during the New Guinea campaign were achieved with the Type 97 machine guns. These had a maximum cyclic, and quite fast, rate of fire of 900 rounds per minute. It was commonplace for the more aggressive Zero-sen pilots to return from combat with empty machine gun magazines, whilst they rarely used all the cannon ordnance even during strafing runs.



A significant difference between the carrier- and land-based versions of the Model 21 was the provision of a radio. The quality of Japanese airborne radio technology at the beginning of the Pacific War was barely adequate for air-to-air and air-to-ground communications, lacking both clarity in communication and range. For carrier fighters radio was clearly a necessity, even if of poor quality. As noted in the previous chapter, some land-based Zero-sen units (including those in New Guinea) had the radios removed after pilots complained that the equipment was little more than useless weight.

A6M3 MODEL 32

As IJNAF pilots gained experience with the Zero-sen in combat over China and through continued testing, complaints and recommendations began to reach the Kōku Hombu and Mitsubishi. The most vocal complaint concerned the fighter's poor lateral control at high speeds. As air speed increased above 180mph, aileron response deteriorated rapidly, and above 230mph the Zero-sen became difficult to roll. Additionally, pilots wanted better performance at altitude and more ammunition for the Type 99-1 cannon.

In response, in mid-1941 Mitsubishi fitted two standard A6M2 airplanes with the improved Sakae-21 engine, which featured a two-stage, two-speed supercharger and a higher rating of 1,130hp. However, the new engine was heavier and larger mainly due to the supercharger, which moved the center of gravity too far forward on the existing Model 21 airframe. To shift the center of gravity back to tolerance, the Model 32's engine mounts were moved rearwards and the cowl was enlarged, with additional

This A6M3 included parts from five different Mitsubishi-built Zero-sen captured by Allied troops following the Battle of Buna on December 27, 1942. These sections were shipped to Brisbane in February 1943 and combined into one aircraft by engineers from the Technical Air Intelligence Unit—South West Pacific at nearby Eagle Farm. The re-built Model 32 made its first flight from here on July 20, 1943, and it was later tested by both RAAF and USAAF pilots. Whilst still in Australia the fighter flew a series of mock combats with a Spitfire VC. Subsequently shipped to the USA aboard the escort carrier USS *Copahee* (CVE-12) in September 1943, the aircraft's performance was further analyzed at Wright Field, Ohio, by USAAF Air Technical Service Command. This photograph was taken during a test flight from Wright Field in 1944.

modifications made to the cowl flaps, oil cooler intake, and the carburetor air intake. The cowl also had openings in the front for two 7.7mm machine guns. After initial test flights, pilots recommended eliminating the wing-folding mechanism and fairing over the wingtips. In shortening the wing by around three feet, the Mitsubishi engineers also reduced the span of the ailerons. This combination improved aileron control, roll rate and the fighter's performance in a dive at higher speeds for a relatively small loss in overall maneuverability and rate of climb.

The ammunition feed system for the Type 99-1 cannon was changed from a drum magazine to a belt feed and the number of rounds increased to 100 per weapon thanks to greater storage volume within the new wings.

With both a revised fuselage and a new engine, the A6M3 was designated the Type 0 Carrier Fighter Model 32. Disappointingly, the Zero-sen Model 32 proved to be only five knots faster than the Zero-sen Model 21, due in part to the added weight of the new engine and more ammunition. More critically, although the capacity of the two wing fuel tanks was increased slightly, a reduction in the size of the fuselage fuel tank lowered the overall fuel capacity. The latter, when combined with the Sakae-21's higher fuel consumption than the Sakae-12, reduced the range of the Zero-sen Model 32 by a staggering 580 nautical miles.

Entering production in early 1942, the Zero-sen Model 32, with its inherent deficiencies, came to be used primarily for short-range offensive missions and the defense of Rabaul by both the Tainan and the 2nd Kokutai.

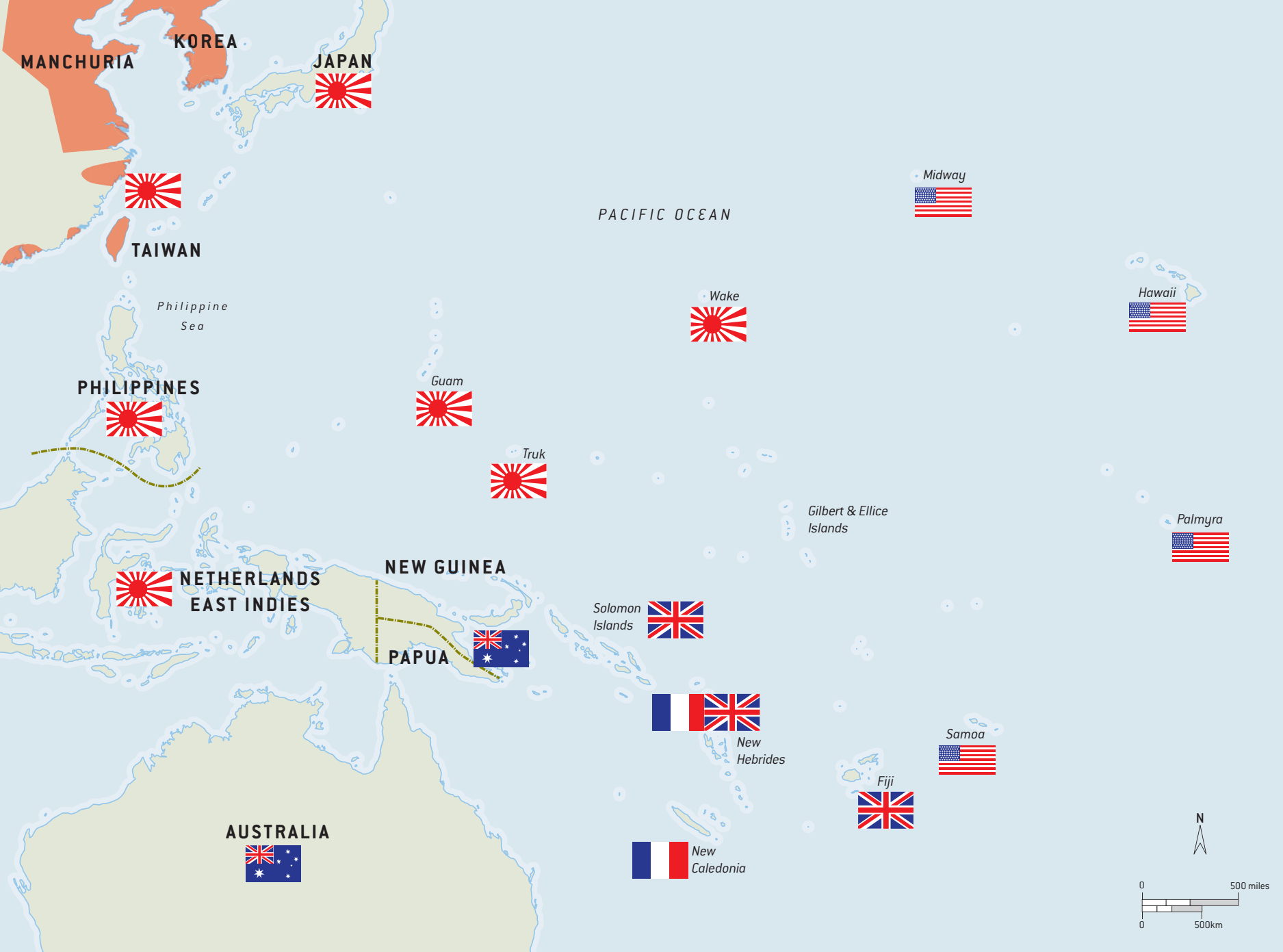
P-39D-2 Airacobra and A6M2 Type 0 Carrier Fighter Model 21 Comparison Specifications

	P-39D-2 Airacobra	**A6M2 Type 0 Model 21**
Powerplant	1,325hp Allison V-1710-63	950hp Nakajima Sakae-12
Dimensions		
Span	34ft 0in.	39ft 4.7in.
Length	30ft 2in.	28ft 8in.
Height	11ft 10in.	10ft 0in.
Wing area	213sq. ft	241.5sq. ft
Weights		
Empty	5,462lb	3,704lb
Loaded	8,200lb	5,313lb
Performance		
Max speed	368mph at 13,800ft	331mph at 14,930ft
Range	800 miles	1,160 miles
Climb	to 15,000ft in 5min 7sec	to 19,685ft in 7min 27sec
Service ceiling	32,100ft	32,810ft
Armament	1 x 37mm M4 cannon 2 x 0.50-cal M2 and 4 x 0.303-cal M2 AN Browning machine guns	2 x 7.7mm Type 97 machine guns 2 x 20mm Type 99-1 cannon

THE STRATEGIC SITUATION

By March 1942 Australia lay squarely in the path of Japanese expansionism, the focal point of which became the small coastal town of Port Moresby on New Guinea's southern coastline. Further north, Japanese troops had already captured Rabaul, Gasmata and Lae. The Anglo-US policy of "Europe first" meant that the Allies' best strategic outcome in the medium term would be checking the Japanese advance. Pre-war Australian planning assumed a worst-case scenario that Port Moresby could not be held. The establishment of a coastwatcher network in New Guinea resulted from such thinking, comprised of dedicated men equipped with radios to report enemy air and sea movements from remote locations. The first post was established in the mountains behind Port Moresby in August 1940, enabling reporting of enemy movements after the town's capture.

By February 1942 the town still lacked aerial defenses, although it played host to small detachments of RAAF Catalina flying boats and Hudson bombers. These aircraft undertook the first aerial offensives against Rabaul and Lae, and also bolstered cooperation between RAAF and USAAF aircrew, enabling the Australians to share their operational experience with newly arrived American aircrews. Port Moresby was in turn bombed for the first time on February 3, 1942, and on the 28th six 4th Kokutai A6M2s strafed the town and harbor, sinking a Catalina at its moorings. Meanwhile, USAAF B-17E Flying Fortresses had conducted the first American raids against Rabaul, staging through Port Moresby. The town was considered insufficiently defended to warrant the exposure of valuable USAAF aircraft to Japanese air attack, thus they remained based in Australia.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KOREA
JAPAN
TAIWAN
PACIFIC OCEAN
Midway
Philippine Sea
Wake
Hawaii
PHILIPPINES
Guam
Truk
Gilbert & Ellice Islands
Palmyra
NETHERLANDS EAST INDIES
NEW GUINEA
Solomon Islands
PAPUA
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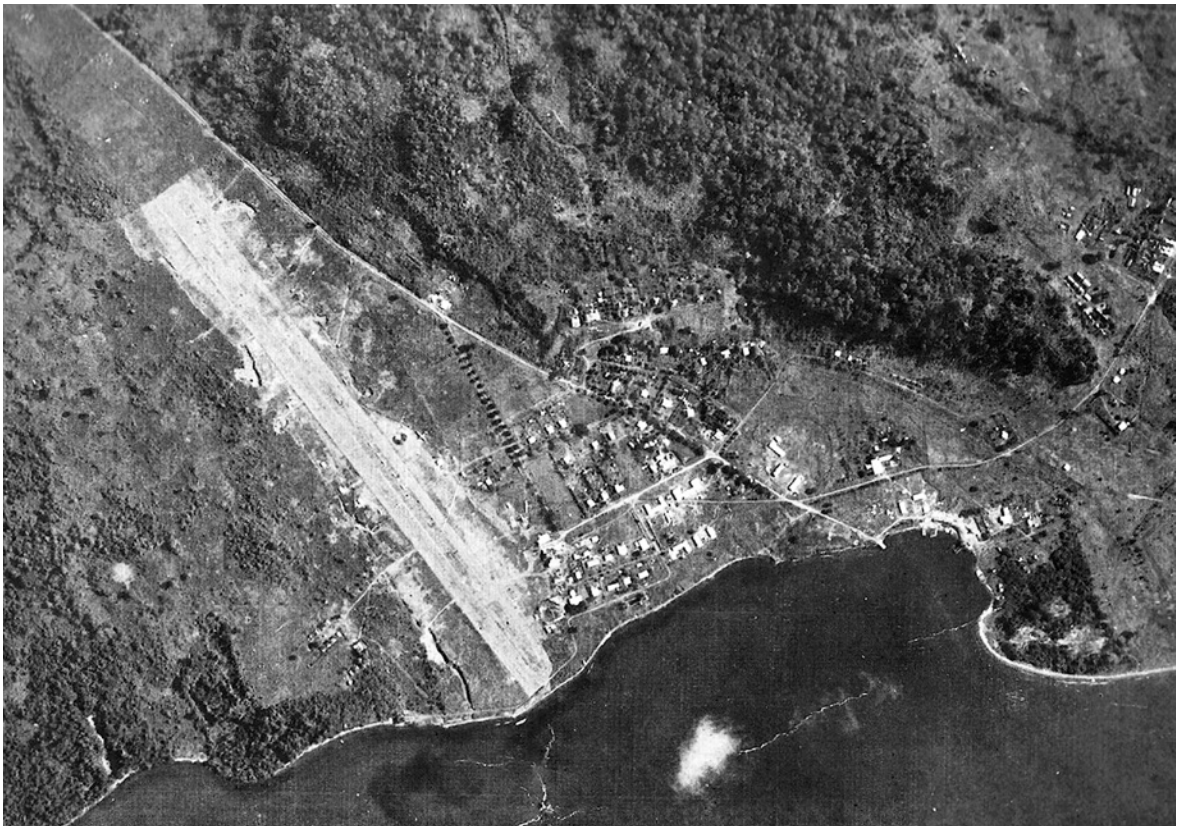

An aerial view of Lae airfield taken in May 1942 by an F-4 Lightning from the 8th Photo Reconnaissance Squadron. Zero-sen are parked between the runway and taxiway, pilots often being forced to land on the latter due to bomb damage inflicted by RAAF and USAAF aircraft.

OPPOSITE
The strategic South Pacific battleground in April 1942, when the Airacobra first entered combat in New Guinea. Few changes occurred to the strategic outlook that year aside from the Japanese invasion of Guadalcanal, in the Solomon Islands, which was stoutly defended and eventually held by US forces.

In an attempt to secure aerial supremacy over Port Moresby, the IJNAF Command decided to commit its crack fighter unit – the Tainan Kokutai – to the aerial offensive. The cream of Japan's Zero-sen pilots were transported to Rabaul in a modest merchantman – an extraordinarily risky decision. Although a direct route would have minimized exposure to American submarines, *Komaki Maru* berthed at Kupang, Ambon and Davao during its extended cruise. The merchantman commensurately toted explosives, bombs and aviation fuel, and lacked convoy protection. Had the vessel been torpedoed, the ensuing loss of the priceless pilot cadre on board would have dealt a serious blow to Japan's capabilities in the New Guinea air war. The Zero-sen pilots should have instead been ferried to Rabaul by air, thus allowing them to consolidate the IJNAF's aerial presence in-theater and safeguarding their arrival in New Guinea.

On March 21, 1942 the first defenders of Port Moresby's skies arrived in the form of P-40E Kittyhawk IAs flown by the RAAF's No. 75 Sqn. This unit subsequently fought itself into oblivion in just 44 days engaging Zero-sen of the 4th and Tainan Kokutai. In the process they established a pattern of tit-for-tat exchanges between Port Moresby and Lae that was later adopted by USAAF Airacobra units.

During this period, the airfields surrounding Port Moresby were gradually expanded and upgraded. By May 1942 the former civilian field at Kila was ready for military operations, and new airfields were underway at 12-Mile (Bomana) and 17-Mile (Waigani). Other extant fields included 7-Mile (Jackson's Drome), 5-Mile (Ward's

Manus Island
Kavieng
Tabar Island
New Ireland
Namatanai
BISMARK SEA
Rabaul
Lakunai
Vunakanau
Talasea
New Britain
Gasmata
Bougainville
Finschhafen
Lae
Salamaua
SOLOMON SEA
NEW GUINEA
Buna
PAPUA
Kokoda
Port Moresby
Milne Bay
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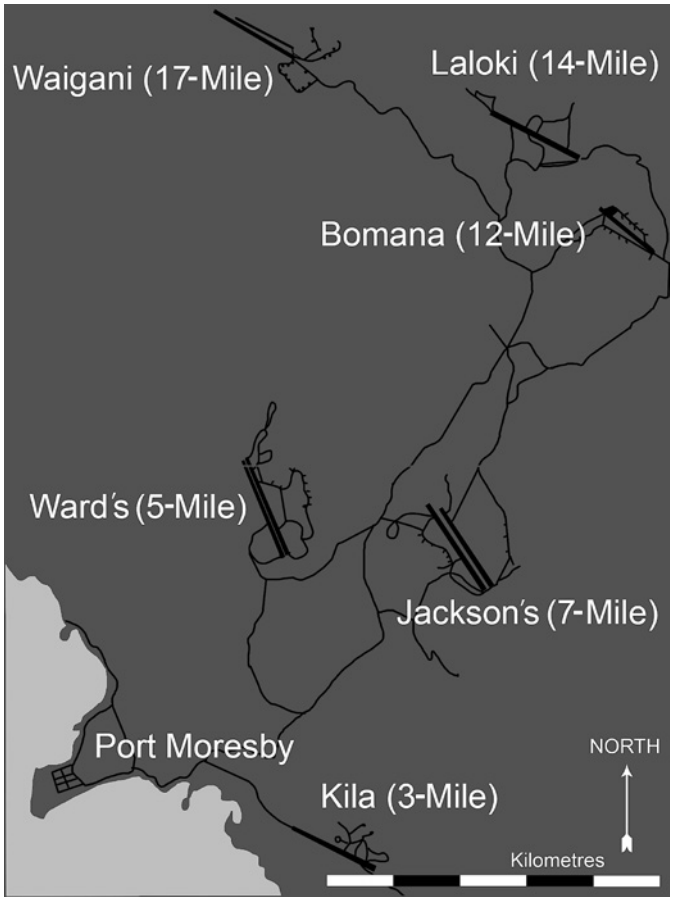
Drome), and 14-Mile (Laloki). A coral-base field on nearby Daugo Island served for emergency landings, and a satellite field at 30-Mile (Rorona) would later host defensive units. Port Moresby's airfields and infrastructure were well interconnected with a road and taxiway system that enabled logistics flow.

Compared to the developing infrastructure at Port Moresby, facilities for Zero-sen at Lae remained basic. They comprised a former colonial wooden house that served as a command post, with limited and unreliable battery-provided electricity. A handful of vehicles assisted operations, although there were no hangars or a control tower. Approximately 200 men manned flak positions beyond the airstrip, supplemented by about 100 maintenance personnel and 30 pilots. Twenty non-commissioned officers and three enlisted pilots resided in a nearby accommodation hut.

The daily schedule for the Lae wing commenced at 0230 hrs when maintenance crews rose to prepare the Zero-sen. One hour later pilots ate breakfast comprising rice, soybean paste soup and dried vegetables. They then waited by their Zero-sen, engines warmed and ordnance loaded. In the late afternoons pilots conducted group gymnastics, then bathed and had dinner. Limited recreation included playing guitars, ukuleles, and harmonicas. Letters home were written, and countless games of checkers and chess were played. By 2100 hrs pilots were in bed. They shared such limited distractions with their American counterparts, and on both sides morale remained high. Spartan conditions and lack of luxury gave little cause for complaint. Homesickness was universal to both sides.

Both sides strafed survivors in parachutes if opportunity presented itself. Verifiable examples of the practice are rare, but they did occur. It was not standard practice, however, nor based on orders or encouraged. Zero-sen pilots operated under a martial culture and honor code incomprehensible to their American counterparts, who observed the unquestioned assumption that their own notions of fair play should be universally imposed on everyone. Shooting at parachutes also incurred a practical downside, for in order to line up such a target the attacker had to decelerate and fly a straight course – not safe in a combat zone. There was also the prospect of mistaken identity, and shooting down one of your own. Moral judgment of this activity has been skewed by the fact that the Airacobra pilots lacked occasion to do so in 1942 simply because their opponents in Zero-sen were not using parachutes.



7-Mile Drome was Port Moresby's only serviceable military airfield when the first Airacobras arrived in April 1942. However, within six months, five more airfields had been constructed for the use of RAAF and USAAF units charged with defending the capital of New Guinea.

OPPOSITE
Papua and the Australian Mandated Territory of New Guinea in 1942, with place names commonly used throughout the text in this volume.

THE COMBATANTS

USAAF PILOT TRAINING

Following the US entry into the war, the USAAF pilot training program evolved as an ongoing initiative in mass education. While the pre-war pilot training program was small, scattered, and poorly coordinated, by early 1942 it had been amalgamated under Flying Training Command and was readily expanding. It leased civilian schools, bought or leased hotels, and embarked on a massive building program for new airfields. This expansion occurred at a rapid pace, particularly in the southern states where there was more land for airfield development and generally better weather.

Every potential pilot inducted into the developing training program at first underwent rigid physical and psychological tests to determine their suitability. If successful, they then attended a five-week basic military course followed by ten weeks of pre-flight school covering such topics as physics, mathematics, and map reading. This was followed by ten weeks of primary flying school, and then another ten weeks of basic flying school. During this latter phase, instructors would determine into which flying discipline a pilot would be streamed – fighter, bomber, or transport. For those chosen to be fighter pilots, the advanced training phase entailed a further 70 hours of flying, 60 hours of ground school, and more military training.

At the successful completion of this course all fighter pilots were commissioned as second lieutenants. This meant that all Airacobra pilots who fought in New Guinea were officers with this rank or above. This contrasted with the IJN system, whereby most pilots were non-commissioned ranks. The USAAF training program placed more emphasis on academic subjects than its IJN counterpart.

P-39D 41-7203 is assembled at Amberley airfield in late February 1942, the fighter having been unloaded in Brisbane from the Army Transport Service vessel USAT *Ancon* on the 25th of that same month. The aircraft had been shipped in from San Francisco, along with USAAF personnel (including the groundcrew seen here) and elements of the US Army's 32nd Infantry Division.

Once in-theater, Airacobra pilots relied on the ingenuity of the hardworking groundcrews to keep their somewhat temperamental fighters serviceable. The aircraft were initially maintained by a small echelon of 100 men from the 35th Service Squadron prior to the arrival of the larger and better-equipped 8th Service Group on July 30, 1942. Despite lacking hangars, personnel from the latter unit were able to conduct comprehensive "3rd Echelon"-level airframe maintenance at four of Port Moresby's airfields.

At 7-Mile Drome, Sgt John Hand managed a 24-hour coffee shop that supplied sufficient levels of caffeine to enable maintenance personnel to continue working around the clock. Refueling of Airacobras was conducted from the back of ubiquitous US Army GMC CCKW "Deuce-and-a-half" trucks, each of which carried

Door art was commonplace on aircraft assigned to Port Moresby's Airacobra units, with this machine gun-toting blackbird adorning 1Lt David Latane's 41st FS P-400 in late 1942 at 7-Mile Drome. This aircraft was lost when it suffered an in-flight engine fire on February 9, 1943, Latane noting in his logbook, "Plane caught on fire 20 miles north of 30-Mile Drome. Took me six days to walk back after bailing out into the thickest swamp I have ever seen."

P-39D AIRACOBRA COCKPIT

1. Radio receiver control box
2. Bomb release handle
3. Cannon-charging handle
4. Cannon-loading handle
5. Radio transmitter control panel
6. Propeller control switch
7. Booster fuel pump switch
8. Battery switch
9. Manifold pressure gauge
10. Camera switch
11. Fuel/oil pressure and temperature gauge
12. 0.50-cal machine gun switch
13. Rate-of-climb gauge
14. Air speed indicator
15. Engine RPM gauge
16. Gyro turn indicator
17. Artificial (gyro) horizon
18. Sensitive altimeter
19. Remote indicating compass
20. Propeller safety switch
21. Landing gear switch
22. Pitot head heater switch
23. Navigation light switches
24. Cannon switch
25. Generator control switch
26. Ignition switch
27. Fuel gauge
28. Gearbox oil pressure gauge
29. N-3 automatic computing gunsight
30. Suction gauge
31. Prestone engine coolant temperature gauge
32. Engine primer
33. Carburetor air temperature gauge
34. Oxygen supply gauge
35. Contactor heater switch
36. Fuel pressure warning light
37. Machine gun charging handles
38. Windscreen spray controls
39. Propeller anti-icer controls
40. Oxygen supply control valve
41. Cockpit lights
42. Bank-and-slip indicator
43. Emergency door release handle
44. Throttle control lever
45. Mixture control lever
46. Propeller pitch controls
47. Throttle friction adjusting nut
48. Fuses
49. Radio relay switch box
50. Wing flap switch
51. Rudder trim wheel
52. Elevator trim wheel
53. Fuel tank selector valve
54. Emergency landing gear control crank
55. Door latch handles
56. Map holder
57. Control column
58. Pilot's seat
59. Window control handles
60. Rudder pedals

16 44-gallon drums. A two-stroke single cylinder engine powered a small pump that could allow groundcrews to refuel an Airacobra in 15 minutes.

The repairs and field modifications conducted in these workshops show that USAAF maintenance personnel consistently used imaginative adaptation to keep serviceable airframes and improve support facilities. American "know-how" was showcased on October 15, 1942 when the Airacobra force-landed by 1Lt Harley Brown five months prior successfully rejoined the sparse Port Moresby inventory.

IJNAF PILOT TRAINING

First and foremost, the fundamentals of IJNAF aircrew training stemmed from its values and codes as a naval organization, not an air force one. IJNAF training focused on quality, with rigorous emphasis placed on the physical fitness of its students to a degree that would have excluded most of their American counterparts.

Few in the IJNAF command structure anticipated a long war, which they assessed they could not win, and thus its training program focused on the tuition of sufficient quality pilots to make a knock-out blow before suing for peace. At the commencement of hostilities IJNAF pilot training was producing about 2,000 pilots per annum, with the curriculum providing basic carrier operations training for fighter pilots. Primary and basic flight training lasted six months, followed by an operational phase whereby pilots were assigned to a frontline unit to gain more experience.

In Japan's case, and in the 1942 New Guinea theater in particular, the impact of attrition amongst Zero-sen pilots was more severe than bare quantitative losses would suggest. At the beginning of the war, the IJNAF mustered about 3,500 pilots, 600 of which were assigned to carrier units. The most highly skilled aviators in the IJNAF, each of the carrier-based pilots had an average of 800 hours of flying time.

The Tainan Kokutai pilot cadre arrived in-theater with hard-won combat experience, which was difficult to replace. The loss of key Zero-sen pilots to their counterparts flying

The officer cadre from the Tainan Kokutai pose for a photograph on Jolo Island, in the Philippines, in January 1942. In the front row, second from left, is WO Gitaro Miyazaki, who was killed fighting with Airacobras west of Port Moresby on June 1, 1942. In the second row, second from left, is the Tainan Kokutai's Executive Officer, Cdr Yasuna Kozono, and to his left is the unit CO, Capt Masashita Saito. At the extreme right in this row is Lt(jg) Hideki Shingo, whilst in the back row, fifth from left, is high-scoring ace Lt(jg) Jun'ichi Sasai. Both men would see considerable action over New Guinea, with Sasai being killed during the early stages of the Guadalcanal campaign.

A6M2 ZERO-SEN COCKPIT

1. IJNAF Type 98 Reflector Gunsight
2. Artificial horizon
3. Turn-and-bank indicator
4. Compass
5. IJNAF Type 97 7.7mm machine guns
6. Rate-of-climb indicator
7. Fuel pressure gauge
8. Tachometer
9. Cylinder head temperature gauge
10. Oil temperature gauge
11. Intake manifold pressure gauge
12. Oil cooler shutter control handle
13. Ignition plug charger switch
14. Brake pedals
15. Oxygen control
16. Oxygen pressure gauge
17. Oxygen quantity gauge
18. Control column
19. Wing fuel tank quantity gauge
20. Fuselage fuel tank quantity gauge
21. Switchboard
22. Fuel injection pump
23. Engine main switch
24. Radio direction indicator
25. Altimeter
26. Exhaust temperature gauge
27. Clock
28. Airspeed indicator
29. Interior lights
30. Radio homing control unit
31. Type 3 Mk 1 Radio Control panel
32. Arrestor hook retraction handle
33. Arrestor hook/flap down angle indicator
34. Radio homing equipment control lever
35. Cowl gills control handle
36. Cockpit ventilation air intake
37. Seat adjustment lever
38. Seat
39. Elevator trim tab control handle
40. Machine gun safety lever
41. Throttle lever
42. Machine gun selector switch
43. Propeller pitch adjustment lever
44. Mixture control lever
45. Drop tank release lever
46. Bomb release levers
47. Switchboard
48. Flap control lever
49. Landing gear lever
50. Wing tanks fuel gauge
51. Fuselage/wing tank switching cock
52. Wing tanks selector lever
53. Emergency gear down lever
54. High-altitude automatic mixture control

aircraft losses with relative ease, but the IJNAF possessed neither the time nor the resources to replace the skilled and experienced A6M pilots who perished over New Guinea.

The IJNAF Zero-sen pilots fighting over Port Moresby and defending Lae operated in a structured caste system, but there is no evidence to suggest that this had an impact on their combat effectiveness. Throughout the aerial campaign we see colorful examples of individualism displayed by fighter pilots. The Tainan Kokutai's impulsive and lively Executive Officer and hikotaicho, Cdr Yasuna Kozono, later played out his full eccentricities in 1945 in Japan when he led a revolt to protest the decision to surrender. The priceless character sketches of Zero-sen pilots painted for us in FPO1c Saburo Sakai's autobiography reveal a cadre welded together more by common purpose than military discipline. The conduct of Lt Cdr Tadashi Nakajima and Capt Masashita Saito gathered praise from their own pilots.

There were, of course, limits to this individualism. FPO1cs Hiroyoshi Nishizawa, Saburo Sakai, and Toshio Ota allegedly performed an aerobatic routine over Port Moresby that was termed a "danse macabre" in Sakai's memoirs, citing the date May 17, 1942. However, the event, which has since become historical folklore after first being recounted by Martin Caidin in 1957, did not occur. Few historians to date have challenged its mythology, yet had this "airshow" happened many servicemen at Port Moresby would have witnessed the event or heard about it. The incident rates no mention in the hundreds of Allied reports, cables, letters, diaries, memoirs, or interviews scoured for this text. IJNAF flight discipline would have forbidden such activity – three flight leaders leaving behind their wingmen without good reason or forewarning was unthinkable.

When the surviving Tainan Zero-sen pilots were sent back to Japan to recuperate in November 1942, the old guard among them was a fraction of what it had been. These included Lt Shiro Kawai, FPO1c Hiroyoshi Nishizawa, FPO3c Masuaki Endō, the badly wounded Sakai and FPO3c Sadao Uehara. These were a fortunate few, for most of their comrades had been killed in New Guinea or Guadalcanal skies. Nostalgia for earlier victorious times played out at Rabaul prior to the Tainan Kokutai being rebadged as the 251st Kokutai in November 1942 took the form of a sign outside Lakunai's operations hut that bore the titling "Headquarters of the Tainan Kokutai." Inside, a shinto shrine honored deceased pilots.

The Tainan Kokutai became the 251st Kokutai on November 1, 1942, and this group photograph was taken in front of the command post at Lakunai shortly before the former unit administratively disbanded, at least on paper. Battle weary after almost a year of near-constant combat, these pilots were posted back to Japan for rest and recuperation just days later. The vertical signpost behind the pilots has been inscribed with the titling *Imperial Navy Saito Squadron*.

ARTHUR "ART" E. ANDRES

1Lt Arthur "Art" E. Andres arrived as a rookie pilot with the 35th FS in Brisbane, Queensland, along with the rest of the 8th FG on board the former cattle boat SS *Maui* on March 6, 1942. The 8th was subsequently equipped with P-39Ds assembled at Amberley airfield west of Brisbane. The 35th FS briefly stopped at Woodstock airfield, near Townsville, on April 26, 1942 on its way to Port Moresby, where the squadron arrived four days later. Andres and the 35th FS participated in the landmark attack that same afternoon (April 30) which struck Lae and Salamaua at low level. Flying P-39D 41-6930 on this mission, he was one of the few who witnessed the demise of 1Lt Edward Durand, after whom a Port Moresby airfield would later be named.

Andres would later write, "the Zeros were waiting for us – sitting right above and hit us way hard. One Zero was on Ed Durand's tail and I turned around to give the Zero a taste of American bullets but I'm afraid Ed was on his way down. One Zero chased me for quite some time but I was able to outrun him." Andres ran himself short of fuel during this engagement and bellied-in 18 miles southeast of Buna. With the help of natives and their canoes, Andres arrived back at Port Moresby 26 days later.

The morning of May 28, 1942 saw a maximum effort raid mounted on Port Moresby by Tainan Kokutai Zero-sen led by hikotaicho Lt Cdr Tadashi Nakajima. Andres had only been returned to flying status two days earlier, and he took off in P-400 Airacobra BX168 when word of the approaching IJNAF aircraft was received. While still climbing hard in an attempt to engage the high-flying Japanese aircraft, his fighter was hit by enemy fire and he bailed out at about 5,000ft. A Zero-sen fired at Andres while he was under the canopy of his parachute, hitting him in the leg. This wound removed him from flying duties for the next month.

Andres returned to Woodstock airfield with the rest of the 35th FS on June 29, 1942 for rest and re-equipment, followed by another relocation to Garbutt airfield (Townsville) on July 27. The 35th then redeployed to Milne Bay, in New Guinea, on September 18. Andres had flown only a few missions from Milne Bay when USAAF paperwork caught up with him. Standing orders at the time were that any pilot shot down more than once and who had survived was rotated home for security reasons. Promoted to captain shortly after returning to the US, Andres was awarded the Distinguished Flying Cross for his eventful participation in the April 23, 1942 mission.

1Lt "Art" Andres and his unidentified crew chief pose with their third Airacobra in September 1942.

SHIRO KAWAI

Lt Shiro Kawai was a key and influential pilot in Zero-sen operations in New Guinea throughout 1942. Having graduated from pilot class 63-ki, he flew his first combat mission in New Guinea as leader of his own chutai within the 4th Kokutai. Kawai had initially been assigned to the Chitose Kokutai in Truk Lagoon, and he led his chutai to Rabaul in late January 1942. Flying A5M4 "Claude" fighters, Kawai and his subordinate FP02c Masayoshi Yonekawa quickly established air defense for Rabaul.

Kawai and Lt(jg) Nobuhiro Iwasaki – another chutaicho with the 4th Kokutai – were implicated in the killing of Australian PoWs at Gasmata, New Britain, in February 1942. The incident was revealed during a war crimes trial held on Manus Island in 1950, a key witness swearing that Kawai had pressed him to execute the prisoners. Both Iwasaki and Kawai attended the subsequent executions of the PoWs not far from Gasmata airfield in early March 1942.

Kawai took up station at Lae from Rabaul on the afternoon of March 12, 1942, along with FP02c Takuro Yoshinuma and FP03c Take'ichi Kokubun. Here, they joined seven 4th Kokutai Zero-sen that had preceded them the previous day. On March 14 Kawai led his chutai to attack an RAAF airstrip on Horn Island, in the Torres Strait between New Guinea and Queensland. He also led several early strafing missions against Port Moresby. On April 14 Capt Masashita Saito of the Tainan Kokutai led a chutai of nine Zero-sen to Lae, after which all 4th Kokutai fighters came under his command. Until the arrival of Saito's remaining pilots, the Zero-sen at Lae continued to operate under Kawai's command. Leading by example, Kawai fought numerous aerial engagements with Airacobras in New Guinea whilst serving with the Tainan Kokutai. Indeed, he was flying the lead fighter during the clash that led to the downing of 36th FS pilot 2Lt Robert Wilde on May 12.

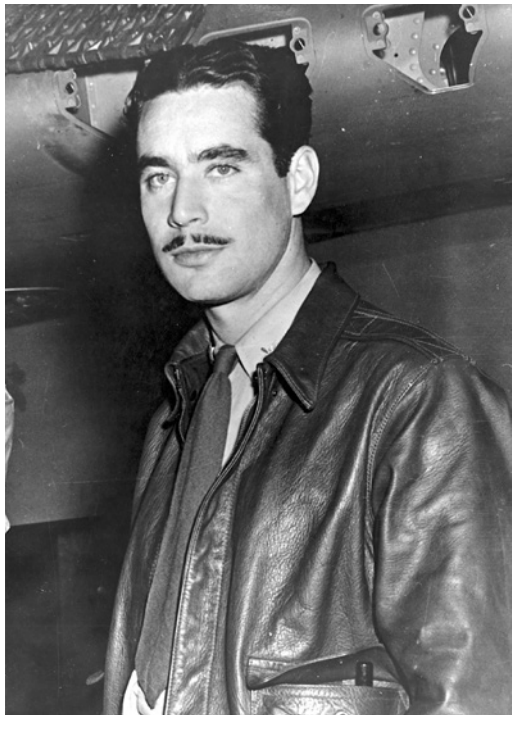
During his time with the Tainan Kokutai, Kawai mainly flew Zero-sen V-153 with two yellow chutaicho stripes. His first V-153 was previously F-153, which he had flown with the 4th Kokutai. He later used a second V-153, which was a new fighter delivered to Rabaul when his original Zero-sen was renumbered and reassigned.

When all surviving Tainan Kokutai Zero-sen pilots returned to Japan from Rabaul on November 1, 1942, the original New Guinea cadre was a fraction of what it had been due to combat attrition. Amongst the survivors were Kawai, who, following three months at home, returned to New Guinea in February 1943 as Air Officer for the 201st Kokutai. He subsequently fought in, and survived, the Solomons campaign, then returned again to Japan. On December 20, 1944 Kawai led 20 Zero-sen to Angeles airfield in the Philippines as fighter reinforcements. By now having attained the rank of lieutenant commander, and holding the position of a hikotai commander within the 221st Kokutai, Kawai bailed out into mountains during combat on December 24 and was never seen again.

Lt Shiro Kawai was one of the busiest pilots in the Tainan Kokutai in 1942, being involved in virtually all of the seminal missions flown by the unit that year. There are few photographs of Kawai in-theater, this one revealing his unique haircut – one of his trademark features.

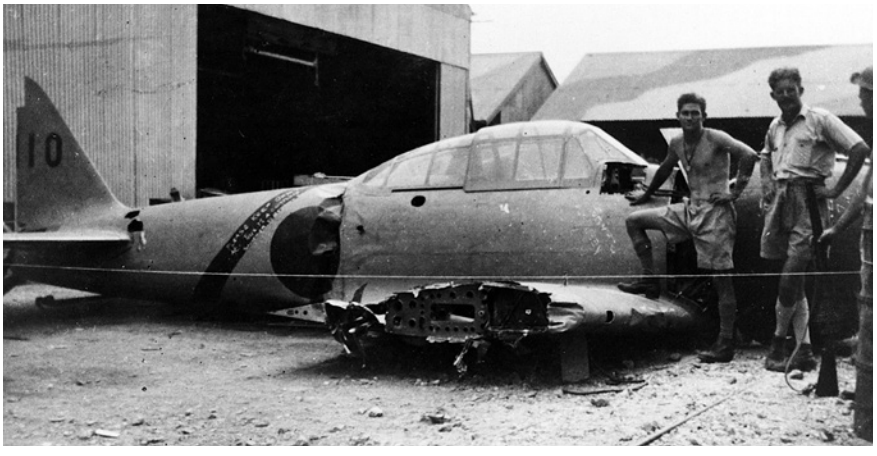
COMBAT

The first Airacobras to arrive in the Southwest Pacific theater were P-400s unloaded from shipping crates in Brisbane and then trucked to the RAAF's Amberley airfield, 31 miles southwest of the city, where they were assembled. Late in the afternoon of April 5, 1942, a flight of five Airacobras reached Port Moresby's 7-Mile Drome. The fighters were led by 26-year-old ace Lt Col Boyd "Buzz" Wagner, formerly CO of the 17th Pursuit Squadron (PS) in the Philippines. At that time the youngest USAAF lieutenant-colonel, Wagner had led this modest-sized deployment to gain combat familiarization alongside Australian P-40 Kittyhawk IA pilots.



Lt Col Boyd "Buzz" Wagner led the first Airacobra combat detachment to 7-Mile Drome on April 5, 1942, by which point he was already one of the USAAF's luminaries of the early Pacific War period. He had achieved ace status flying P-40Es with the 17th PS in December 1941 during the ill-fated defense of the Philippines, before fleeing to Australia. Wagner's exploits were initially viewed with some scepticism by 8th PG pilots when he arrived in New Guinea, although any doubts were quickly dispelled when the ace led the first offensive Airacobra mission against Lae and Salamaua on April 30, 1942. Wagner claimed three Zero-sen destroyed that day, although only one was actually lost. Initially assigned to Fifth Fighter Command HQ and subsequently made Director of Pursuit Operations at Port Moresby, Wagner returned to the USA in late 1942 and was killed in a flying accident on November 29 that same year.

The first Airacobra combat engagement in New Guinea occurred during the mid-morning of April 6 near Port Moresby when 36th PS pilots 1Lts Louis Meng and Charles Faletta engaged seven G4M1



The remains of FP03c Yoshimitsu Maeda's A6M2 in storage at Port Moresby, the pilot having crashed on April 28, 1942 near Milne Bay after becoming lost following an attempted interception of a B-25C from the 3rd BG that photographed Lae. Maeda and FP02c Yoshisuke Arita were scrambled to chase down the intruding Mitchell, and the latter pilot returned to base claiming he had shot it down. Although holed, the bomber made it safely back to Port Moresby. Maeda, having become separated from Arita and with dwindling fuel, initially opted for self-destruction in a strafing attack on a coastal vessel but force-landed in a nearby plantation instead.

"Betty" bombers and their Zero-sen escort. Heavy cloud hindered this landmark mission, which also involved two RAAF Kittyhawks. Three minutes after the No. 75 Sqn fighters had engaged the IJNAF formation, Meng attacked – he later noted in his report that he led a "long machine gun beam developing into a beam attack" from 22,500ft. His 37mm cannon failed to fire, however, as did the M4 in Faletta's P-39D, which attacked five minutes after Meng. Both pilots attributed this untimely failure to faulty breach loading of the cannon shells. Contact with the enemy was only fleeting.

On April 26 nine P-39Ds and six P-39Fs from the 35th PS left Woodstock airfield, near Townsville, to bolster the defense of Port Moresby. When visibility deteriorated in heavy rain north of Cairns, the flights became disorientated and ran low on fuel. Two pilots bellied-in, three successfully landed along the Queensland coast, and two were listed as Missing in Action around Cape Grenville. The remaining eight fighters made it to Port Moresby. Within an hour, seven Airacobras had been removed from the inventory. On May 1 a second delivery flight endured a similar fate when six 36th PS Airacobras left Townsville and headed for Port Moresby via Horn Island. Capricious weather on the approach to Horn Island disorientated the pilots, with two bellying-in, three force-landing on Cape York Peninsula's beaches, and one pilot being killed when he cartwheeled while attempting to land.

Escorted by Australian soldiers, Tainan Kokutai Zero-sen pilot FP03c Yoshimitsu Maeda boards SS *Taroona* on May 6, 1942 at Port Moresby, bound for Australia and captivity. This was the photograph passed by US Army censors for publication on June 21, 1942 that later encouraged Maeda to attempt suicide due to the loss of face he experienced upon seeing it published on the front page of the *Melbourne Sun* newspaper. Maeda survived imprisonment in Australia and returned home from Sydney in March 1946. In post-war Japan he deliberately "disappeared" in an effort to hide his past.

The IJNAF, meanwhile, had enjoyed better luck when

8th PG P-39F-1 41-7170 was flown by Lt Col "Buzz" Wagner on the April 30, 1942 Lae attack. A veteran of many months of combat in New Guinea, the fighter was eventually returned to Townsville, Queensland, in early 1943 for a much-needed overhaul.

A Port Moresby recovery team set out to retrieve the two 35th PS Airacobras forced-landed on April 30, 1942 by Lts Harley Brown and James Bevlock. Brown's P-39D 41-6982, seen here with bent propeller blades, was flown back to Port Moresby five months later, but Bevlock's P-39F 41-7186 had to be left behind.

it came to reinforcing its fighter strength in-theater following a directive issued on April 1 instructing the 4th Kokutai to amalgamate with the Tainan Kokutai. On April 14 the latter unit had sent 20 Zero-sen to Lae, followed by nine more a few days later. Both deliveries significantly increased the number of A6Ms in-theater, the aircrafts' arrival proving timely as the 4th Kokutai had been fighting RAAF Kittyhawks since March 22.

The first offensive Airacobra mission in New Guinea was planned for April 30, with Lt Col Boyd "Buzz" Wagner of Fifth Fighter Command scheduled to lead 17 35th and 36th PS aircraft in an attack on Lae and Salamaua. The fighters would approach Lae from a seaward direction at wave-top height, then bank to the left and head for Salamaua in order to repeat the process. The pilots had no maps, and instead were given rudimentary instructions to fly due south upon their return. Taking off at 1300 hrs and climbing to 20,000ft to traverse the Owen Stanley Ranges, six Airacobras were scratched from the mission through either mechanical failures or a runway collision. The remaining 11 pilots were Lt Col Wagner and Capt George Greene, Lts Arthur "Art" Andres, Donald Campbell, Irving Erickson, and Edward Durand of the 35th PS, and Lts Charles Schwimmer, Harley Brown, James Bevlock, Elmer Ghram, and Louis Meng from the 36th PS.

Both G4M1 bombers and Zero-sen lined Lae's narrow dirt runway when the USAAF fighters attacked, several IJNAF aircraft – including three floatplanes detached from the seaplane tender *Kiyokawa Maru* that was anchored offshore – being shot up during the ensuing strafing passes. The Airacobras then headed across the Huon Gulf in the direction of Salamaua's protruding isthmus, where they strafed camouflaged supply caches. Several USAAF fighters remained at a higher altitude overhead in an attempt to cover the Salamaua strafers from the inevitable interception that was to come.

Stung into action, the Tainan Kokutai quickly scrambled eight Zero-sen from Lae at 1400 hrs, the fighters being flown by Lt(jg) Jun'ichi Sasai, FPO3c Ken'ichi Kumagaya, FPO2c Junzo Okutani, FPO3c Masuaki Endo, WO Watari Handa, FPO2c Hideo Izumi, FPO1c Toshio Ota, and FPO2c Yoshisuke Arita. Sasai and Kumagaya were the first to engage the Airacobras, Greene spotting a lone Zero-sen on the tail of a USAAF fighter and immediately diving after it. Campbell and Erickson also managed fleeting bursts at enemy aircraft. Meanwhile, Meng led Bevlock (in P-39F 41-7186) into cloud north of Salamaua in an attempt to escape the

attention of the Zero-sen. However, more A6Ms intercepted them when they emerged into clearer skies, embroiling the pair in a retreating fight. Meng lost sight of Bevlock and finally put down at 7-Mile almost out of fuel. Fortunately for Bevlock, he had spotted Brown (in P-39D 41-6982) and the two pilots stuck together as they headed for home. Low on fuel, both men force-landed on the southern coastline about 80 miles east of Port Moresby and subsequently returned to their airfield on foot.

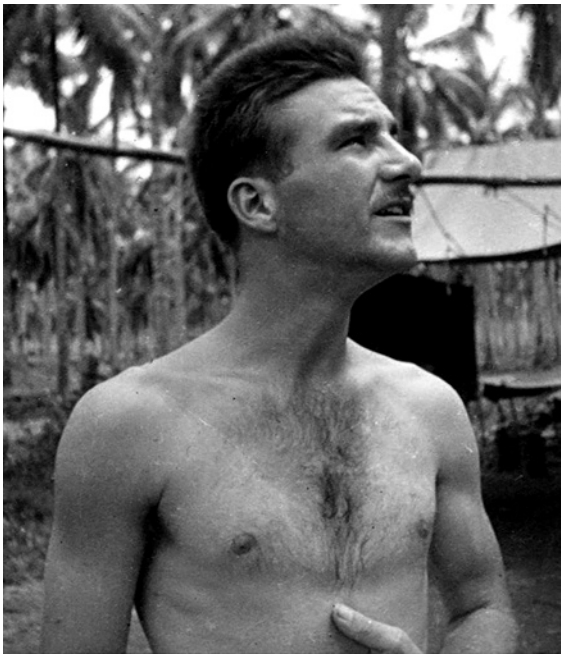
On May 1, 1942 FPO2c Yoshisuke Arita gave the 36th PS its first victory when his fighter crashed not far from 7-Mile Drome. He had fallen victim to future ace 2Lt Don McGee, flying P-39D 41-6941 *Miss Nemesis*. Photographed on Bali Island during the spring of 1942, Arita is standing alongside a Nakajima-built A6M2 that was almost certainly assigned to a Kainan Kokutai shotaicho. The fighter was one of at least 13 Zero-sen presented to the IJNAF as patriotic donations at Tokyo's Haneda Airport on November 15, 1941.

Andres' return was prolonged and more problematic. His coolant system had been damaged, forcing him to land on the northern coastline. Andres was one of the few to witness Ed Durand's demise, seeing his Airacobra (P-39F 41-7128) at low altitude and in trouble. Durand remains Missing in Action to this day. Greene claimed a Zero-sen destroyed and Wagner no fewer than three, although only one was downed. FPO2c Hideo Izumi failed to return, and it is inconclusive as to who shot him down. Japanese records confirm that the strafing destroyed three Zero-sen, with seven more damaged. Ten G4M1s were also damaged.

The following day two chutai of Tainan Kokutai Zero-sen led by Lt Masao Yamashita strafed Port Moresby's airfields in a reprisal attack at 0810 hrs. On their way back to Lae they encountered an Airacobra patrol heading home. One Zero-sen was shot down by 36th PS pilot, and future ace, 2Lt Don McGee, flying P-39D 41-6941 *Miss Nemesis*. McGee, already low on fuel, pushed his fuel endurance to its limits during the brief engagement:

> I simply worked the whole sight out in front of the enemy plane and fired a burst at about 40 degrees deflection. The tracers flew by the Zeros on the right side. I adjusted my lead and fired another burst. The tracers flew by just under my target. Adjusting again, I pulled the sight farther out in front, raised it some, and fired at about 15 degrees deflection. This time, the tracers covered an area in front of and all around the enemy plane. There was no fire or smoke, but the Zero rolled slowly to the left as if to start a split-S. I followed the Zero, but suddenly I realized that we were only about 150ft off the ground! I pulled out at just about the level of the trees and saw the explosion over my right shoulder as the Zero hit the ground. I assume my bullets hit the pilot.

FPO2c Yoshisuke Arita gave the 36th PS its first victory, his fighter crashing not far from 7-Mile Drome – black smoke rising from the shattered remains of the A6M could be seen from the airfield. Other Zero-sen then chased McGee out to sea, scoring hits on the P-39's wings and tail. A single machine gun round also shattered one of the Plexiglas panels in the canopy before cleanly removing McGee's sunglasses. The pilot was not hit, however.



36th FS pilot 2Lt Donald McGee at Port Moresby in late May 1942. A native of Brooklyn, McGee was the only Airacobra pilot in the New Guinea campaign to shoot down two Zero-sen on consecutive days in 1942, his victims being Sea1c Haruo Kawanishi and FP02c Yoshisuke Arita. Credited with two more Zero-sen kills on May 29, McGee "made ace" flying the P-38 with the 80th FS in September 1943.

Throughout early May a handful of RAAF Kittyhawks continued to operate alongside the recently arrived Airacobras. For example, shortly after 0630 hrs on May 2, Lt(jg) Jun'ichi Sasai and his chutai were intercepted by three Kittyhawks and seven Airacobras over Port Moresby. Sea1c Haruo Kawanishi was shot down by 2Lt McGee for his second confirmed victory in two days, while fellow Airacobra pilots Lts Louis Meng, Joseph Lovett, David McGovern, and John Mainwaring also claimed a kill apiece after this engagement. However, only Kawanishi was in fact shot down. The crash site of his Zero-sen, bearing the tailcode V-104, was located on a mountain top about 40 miles from Port Moresby three months later.

Unlike the Airacobra pilots, who often took off before sunrise, their Japanese counterparts usually preferred to wait until daylight before heading out on missions to Port Moresby. This proved to be the case on May 3 when 14 G4M1 bombers from the 4th Kokutai, escorted by nine Zero-sen led by Lt Masao Yamashita, were detected by Australian spotters nearing Port Moresby. Airacobras were duly scrambled at 0830 hrs and a 30-minute dogfight ensued. During the combat 2Lt Joseph Lovett entered a terminal dive in P-39D 41-6909 and crashed at high speed into hills near Port Moresby.

In the pre-dawn darkness of the following day ten Airacobras headed for Lae. Five turned back early due to poor weather but the remaining fighters successfully broke through towering cumulonimbus over the Owen Stanleys and approached Lae from the sea. Once over the airfield they strafed four G4M1s. Seven Zero-sen already airborne on patrol engaged the Airacobras, and China War ace WO Watari Handa claimed one destroyed. However, USAAF pilots 2Lts Patrick Armstrong (in P-39D 41-6971), Jefford Hooker (in P-39D 41-6825), Victor Talbot (in P-39F 41-7145), and Charles Schwimmer (in P-39D 41-6956) all failed to return. Given that there were no American witnesses to Handa's claim, it is likely that only one of these four fell to his guns, with the remaining three being brought down by the capricious weather.

Immediately prior to this Airacobra raid, nine G4M1s and an identical number of Zero-sen escorts had headed to Port Moresby on May 4. The engine on 2Lt Fred Featherstone's P-39 suddenly cut out when at full power during the hurried scramble in response to the approaching IJNAF formation, and he was badly injured in the subsequent crash as the fighter ploughed into the banks of the Laloki River. Seven more 8th PG Airacobras did manage to intercept the Japanese aircraft, however, enjoying the advantage of both altitude and sun. 2Lt Bob Wilde fired head-on at one of the bombers then dived away in an attempt to shake off two pursuing Zero-sen.

2Lt Harold Chivers (in P-39F 41-7207) was missing after this combat, with no witnesses. Handa, who was flying his first mission of the day, was the only Zero-sen pilot to claim a victory, so it is likely that he was responsible for Chivers' demise. IJNAF fighter pilots rarely flew consecutive missions in New Guinea, and Handa had made the most of this unusual occurrence to claim two confirmed Airacobra victories on the same day – the first and last time this would ever be achieved by a Tainan Kokutai pilot in New Guinea.

On May 4, 1942 the engine in 2Lt Fred Featherstone's P-39D-15 engine quit when it was running at full power during a scramble. The 35th PS fighter careered into the bank of the Laloki River, badly injuring Featherstone in the process. Undamaged parts and components were later salvaged from the wrecked P-39. Operational accidents such as this one claimed more Airacobras than the Tainan Zero-sen pilots in the first two months of operations following the Bell fighter's deployment to Port Moresby.

On May 5 the operational strength of the Tainan Kokutai stood at just 12 Zero-sen at Rabaul and six at Lae. Two days later, the auxiliary aircraft carrier *Kasuga Maru* (subsequently renamed *Taiyo* on August 31, 1942) launched 20 new A6M2s that successfully reached Rabaul.

Three days later five 35th PS and eight 36th PS Airacobras, led by Capt George Greene, intercepted nine Tainan Zero-sen under the command of Lt Shiro Kawai that appeared over 7-Mile at 1430 hrs. With ample forewarning to allow them to climb above the approaching enemy fighters, the Airacobras dove into the IJNAF formation from 20,000ft. In the confused and widespread combat that followed, the P-39F (41-7188) of 2Lt Alva Hawkins was hit and he was forced to ditch off Varivari Island near Caution Bay. 2Lt John Jacobs clung onto the tail of a Zero-sen at close range but, before he could fire at his opponent, hits from behind splintered his Plexiglas, making him skid and roll away. The damage to his fighter had likely been inflicted by FPO1c Mototsuna Yoshida. Although the Allison engine in Jacobs' Airacobra still ran smoothly and the controls remained responsive, he was in bad shape as warm blood stained his collar and dizziness encroached. Jacobs circled over the sea for 30 minutes waiting for the Zero-sen to clear off before he safely landed.

On May 9, 14 Tainan Kokitai Zero-sen from the 1st and 2nd Chutai arrived overhead Port Moresby at 0710 hrs, the fighters being led by hikotaicho Tadashi Nakajima. The 2nd Chutai flew top cover without firing a shot whilst Nakajima's group strafed both 7-Mile and Kila Kila Dromes in a 25-minute assault, damaging two RAAF Kittyhawks and destroying four A-24s at Kila Kila. Several Airacobras briefly skirmished with the attackers, after which 2Lt McGee put down on the emergency strip at Daugo Island, where the rough coral surface wrecked P-39D 41-6837. 1Lts Robert Harriger and William Bennett were both awarded victories, although in reality no Japanese aircraft were lost. Once back at Lae, engineers discovered that Nakajima's machine had sustained four hits.

This encounter on the 9th marked the end of the Australian Kittyhawk's epic defense of Port Moresby. From now on its skies would be defended solely by Airacobras.

OPPOSITE PAGE BOTTOM
The remains of the Tainan Zero-sen flown by Sea1c Haruo Kawanishi, who was shot down by 2Lt Donald McGee on May 2, 1942.

China War ace WO Watari Handa was credited with two confirmed Airacobra victories on May 4, 1942 – the first and last time this would be achieved by a Tainan Kokutai pilot in New Guinea. Following his six kills in China in 1937–38, Handa added seven more victories to his tally over the Dutch East Indies, Rabaul and New Guinea prior to being evacuated home at the end of 1942 with tuberculosis. He succumbed to the disease in 1948.

At dawn on May 12, 13 Zero-sen headed for 12-Mile and 14-Mile Dromes. En route Sea1c Tamio Kobayashi ditched in the sea off Salamaua for reasons which are unclear. Meanwhile, the Kawai Chutai strafed both fields while the Yamashita Chutai provided cover. Despite the presence of the latter, ten Airacobras pounced on Kawai's strafers and widespread combat ensued. Amongst the USAAF pilots was 2Lt Robert Wilde of the 36th PS, who had been returning to 12-Mile Drome from a patrol when he spotted that his airfield was under attack. Wilde was almost certainly wounded in the melee for he force-landed P-39D 41-6802 in hilly savannah. No one saw him come down and he was declared Missing in Action. Wilde's remains were not recovered from the cockpit of his fighter until July 21.

On May 13 at Lae, six Zero-sen took off at 1115 hrs for a scheduled sweep of Port Moresby. Led by WO Watari Handa, the fighters approached their target at noon in single file at 12,500ft – an unusual formation for the period. Handa led a wide left turn, gradually descending to 6,000ft, where they were jumped by eight Airacobras. Handa later reported that FPO3c Masami Arai, flying third in the formation, followed him, leaving FPO3c Toshiaki Honda to receive the brunt of the Airacobra attack. In an instant Honda's fighter was aflame and plunging earthwards. A protracted 40-minute dogfight spread westwards from the town, during which 2Lt Hervey Carpenter force-landed P-39D 41-6945 on mud flats near Vari Island. Honda's Zero-sen crashed to the northwest of 7-Mile Drome in the vicinity of Mount Lawes, having fallen victim to either 1Lt Elmer Ghram or Capt Paul Brown, both of whom were awarded victories against this single loss.

Tainan hikotaicho Lt Cdr Tadashi Nakajima poses, novel in hand, at Rabaul in July 1942. He led missions to Port Moresby on May 9, 15, 20 and 28, June 7 and 27 and September 7, 1942. Nakajima was, by all accounts, a model leader. The label, in English, on the can of food in the foreground of this photograph indicates that it was captured from American stocks in Guam.

That same day eight replacement A6M2s launched from the carrier *Zuikaku* north of New Ireland and flew to Rabaul.

At dawn the following day, 15 Zero-sen from the Kawai and Sasai Chutai headed for Port Moresby from Lae. They first circled Bomana airfield three times at 5,000ft, before being engaged by ten P-39s from the 8th PG. Capt Brown dived first into the Zero-sen, selecting the last one in the strung out formation:

> I approached mine diving at about 250mph. As I came into range I began firing all guns. The enemy airplane turned quickly to the right, climbing slightly, and my left wing struck his tail assembly, carrying away the top half of the rudder and vertical fin and right elevator. After the collision the Zero started a steep spiral to the right, and owing to the condition of his tail assembly it seems impossible that he could have landed or pulled out. I returned to the field and landed safely – one Zero lost. The color of the metal and fabric stuck to my wing was dull bluish grey. I fired about a one second burst before we hit.

The collision killed FPO1c Toru Oshima, and Brown's Airacobra required a replacement wing tip leading edge.

On May 17, 18 Zero-sen sortied from Lae at 0720 hrs as escorts for G3M2 "Nell" and G4M1 "Betty" bombers of the Genzan and 4th Kokutai, respectively, that were targeting Port Moresby. The two fighter chutai involved were commanded by hikotaicho Tadashi Nakajima and Lt Masao Yamashita. After FPO2c Ken'ichi Kumagaya aborted, the planned rendezvous with the bombers did not materialize, however. Briefly circling, hoping that the fighters would soon arrive, the "Nells" eventually returned to Vunakanau at around noon, followed by the faster "Bettys." Despite being unable to locate the bombers, and lacking radios to communicate with them, the Zero-sen pilots persisted in conducting Port Moresby's 51st raid.

Commencing their strafing runs from the north, the Yamashita Chutai focused on 7-Mile and Bomana airfields, continuing along the Laloki Valley, whilst others ventured further afield into the harbor. Ample warning was provided to the Airacobras to defend the town's airspace, however, allowing a mixed bag of 16 fighters from the 35th and 36th FSs to scramble.

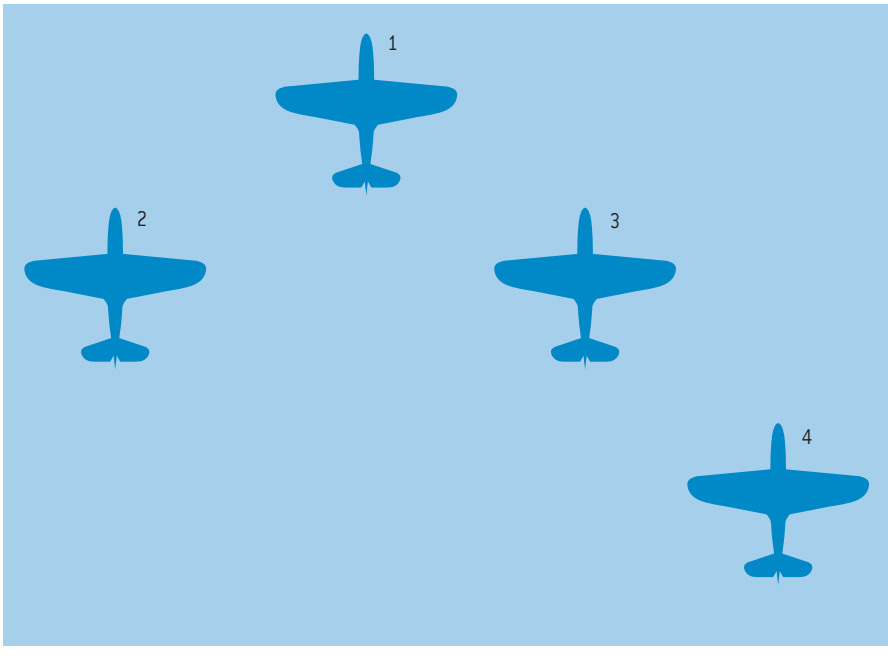
Nakajima's Zero-sen engaged the Airacobras in the skies above Port Moresby, 2Lt Jessie Bland initially attacking a fighter at 1,000ft overhead 7-Mile. He was then forced to climb to 6,500ft in order to shake off another A6M, and moments later a third Zero-sen emerged from cloud and hit the Aircrobra's engine with a well-aimed burst of fire. Bland guided his crippled fighter (P-39F 41-7122) towards the sea off Pyramid Point, adjacent to Bootless Bay, where he ditched. The Airacobra nosed over just offshore in shallow water, at which point Bland gashed his head on the gunsight. Dazed, he waded to the beach and thence made it to 7-Mile Drome with the assistance of supportive villagers and an Australian Army jeep.

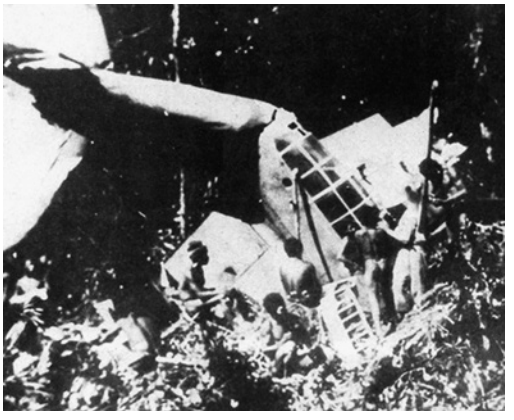
Just prior to Bland's demise, 1Lt Paul Brown had also taken off from 12-Mile Field to intercept the attackers, who tore apart the outer port wing of his fighter. The aircraft was immediately thrown into a spin, from which Brown soon recovered and put down at 30-Mile Field. Another P-400 pilot conducted a precautionary landing in the savannah inland from Beagle Bay, and he subsequently flew the fighter home later that afternoon.

During the strafing attack on 12-Mile, fire from Australian-manned Bofors guns hit the engines in the fighters flown by FPO2c Tsutomu Ito and Lt(jg) Kaoru Yamaguchi. Ito immediately headed north on his own in an effort to make it back to Lae, whilst Yamaguchi

Airacobra formation

In its early New Guinea operations throughout 1942, the USAAF used the four-fighter flight as a standard formation. Depending on the pilots' level of experience, these would often break down into two-fighter flights for combat, with a strong emphasis placed on sticking to one's wingman. Serviceability levels often limited the number of Airacobras airborne at any one time, however, and like their IJNAF counterparts, USAAF units would often be forced to fly standing patrols with only two fighters, and larger missions conducted with whatever was available. Airacobra operations in New Guinea in 1942 took place early on in the Pacific War, and local commanders were still gaining combat experience. This in turn meant that lessons learned fighting the enemy often dictated squadron structure in the field more than USAAF doctrine.





The wreckage of FPO2c Tsutomu Ito's Nakajima-built A6M2 was photographed by a USAAF intelligence team a few days after its pilot flew the flak-damaged fighter into trees surrounding Kosipe Swamp on the approach to Mount Albert Edward, in the Owen Stanley Ranges, on May 17, 1942. FPO2c Ito was captured almost two weeks after he had force-landed, and he was eventually shipped to the Cowra PoW Camp in New South Wales.

rejoined the main formation with a faltering engine. Forty minutes after leaving Port Moresby, Ito belly-landed his fighter, flaps down, into trees covering the Kosipe Swamp on the approach to Mount Albert Edward in the Wharton Range. Cut and dazed, he then traveled by day and slept at night in trees before being handed over by villagers to an Australian Patrol Officer nearly two weeks later. Walking into Port Moresby on June 28, FPO2c Ito remains the only Japanese combatant to have walked the Port Moresby end of the Kokoda trail. He was imprisoned in Cowra PoW Camp in New South Wales and returned to Japan in 1946.

Having re-grouped minus Ito, the remaining 16 Zero-sen pilots climbed towards the spectacular Mount Victoria. Lt(jg) Kaoru Yamaguchi, who carried no parachute, struggled to keep up with the main formation, falling away to the left below the rest of the fighters. With their canopies open and flying in single file, the remaining pilots took it in turns to inspect the straggler. Entering a dead-end valley, and lacking sufficient fuel to detour eastwards around Mount Victoria towards the northeast coast of New Guinea, Yamaguchi's fighter stalled at an altitude of 4,500ft and was "swallowed up" by the jungle canopy near the village of Boride. As a long shot, FPO1c Sakai and Lt(jg) Sasai later overflew Yamaguchi's crash site and dropped supplies.

Three Zero-sen from the Nakajima Chutai had also sustained damage during their clash with Airacobras over Port Moresby, resulting in FPO2c Ichirobei Yamazaki being badly wounded – he made it back to Lae, however.

On May 15 all USAAF units worldwide had been ordered to change their designations from Pursuit Squadrons to Fighter Squadrons. Three days later Rear Admiral Sadayoshi Yamada's 25th Air Flotilla mounted its last big strike of the month against Port Moresby after the cancellation of Operation *MO* – the seizure of Tulagi and Port Moresby, leading to the Battle of the Coral Sea. No fewer than 18 G3M2s from the Genzan Kokutai and 16 G4M1s from the Dai-4th Kokutai targeted 7-Mile and Bomana Dromes, the bombers taking off from Vunakanau at dawn. Their escort consisted of Tainan Kokutai Zero-sen from both Lae and Lakunai, which had departed 20 minutes after the "Betty" bombers. The Lae fighters were led by Lt Shiro Kawai whilst those from Lakunai were under the command of Lt Masao Yamashita.

The IJNAF formation was duly reported by Australian spotters and 18 Airacobras scrambled to intercept the bombers. The G4M1s managed to attack 7-Mile, however, before the 8th FG engaged them at 0915 hrs. Although one of the "Bettys" crashed in flames into Port Moresby's hinterland, P-39F 41-7191 of 2Lt Charles Chapman was also lost when it collided with one of the bombers and exploded after the pilot had miscalculated his approach. Although the Zero-sen arrived too late to defend the bombers, the Kawai Chutai belatedly went after a trio of Airacobras while the Yamashita Chutai remained distant and unengaged. The G3M2s that attacked Bomana Drome destroyed two parked Airacobras without loss.

Forty-eight hours later, 15 Zero-sen led by Lt Cdr Tadashi Nakajima swept over Port Moresby's airfields at 0800 hrs. In a marked change from their previous tactics, the IJNAF pilots clawed their way up to 25,000ft en route to the target area, taking

1hr 20min to get to Port Moresby. Nakajima was convinced that the extra altitude on the approach to the airfields would give him and his pilots the advantage of surprise. However, the Japanese aviators were shocked to encounter ten Airacobras several miles ahead of them at much the same height. FPO1c Saburo Sakai recalled:

> The controls were sluggish in the thin air. As the other plane came at me, I tried to gain an advantageous position from which to fire. I kept edging closer to the other fighter in a tight spiral, and maneuvered for a quick burst. I yanked the stick over hard – too hard! Something seemed to crash into my chest and the oxygen mask slipped down to my chin. Afraid to release the controls because I might spin out of control, I fumbled helplessly in the cockpit, and then everything blacked out.

NCO pilots from the Tainan Kokutai's 2nd Chutai come together for a group photograph at Rabaul in June 1942. In the front row, from left to right, are (with IJNAF credited victories in brackets) FP03cs Yoshimi Onishi, Seiji Ishikawa (5 victories) and Ken'ichi Kumagaya (2 victories), Sea1c Suehiro Yamamoto and FP03c Hiroshi Okano. In the second row, from left to right, are FP02c Toshio Ota (34 victories), FP01c Saburo Sakai (60+ victories), Sea1c Masayoshi Yonekawa (6 victories) and FP03c Unichi Miya. Standing, from left to right, are FP01c Hiroyoshi Nishizawa (86 victories), FP03cs Daizo Fukumori, Yutaka Kimura and Masuaki Endo (14 victories), P01/c Katsumi Kobayashi and P03/c Takeichi Kokubun. Of this group, only Sakai and Ishikawa survived the war.

Sakai later regained consciousness and made it back to base, his fighter having possibly been targeted by future 20-victory ace 1Lt Tommy Lynch of the 35th FS who was awarded two kills following this combat. No Zero-sen were actually lost.

The small valley town of Wau, and its airstrip, lay about 15 minutes' flying time inland from Salamaua, high in the mountains. There, an undersized force of Australian Army troops defending the airfield's tight uphill perimeter was dependent on supplies brought in by air from Port Moresby. On May 23, 35th FS Airacobras twice attempted to escort transports trying to reach Wau, but weather defeated them on both occasions.

Three days later, seven 35th and a handful of 36th FS Airacobras again sortied from Port Moresby as escorts for five troop-laden C-47s bound for Wau. Sixteen Tainan Kokutai Zero-sen had departed Lae shortly after the USAAF formation had set off for Wau, the IJNAF fighters patrolling the Lae/Salamaua/Wau triangle at 10,000ft. They soon sighted a large gaggle of Airacobras as they headed north, the two formations becoming embroiled in a sprawling engagement. 1Lt Tommy Lynch claimed his third victory after a head-on attack, 2Lt Jenkins stayed with another enemy fighter in a 45-degree dive at 400mph and 2Lt John Brown followed a Zero-sen in a dive at 350mph, taking ten miles to catch it. Curiously, the Airacobra pilots later reported sighting three burning Japanese fighters on the ground, despite not one Zero-sen being lost. Similarly, the IJNAF claim of five Airacobras destroyed was equally profligate, as 35th FS pilot 2Lt Arthur R. Schultz (in P-39F 41-7221) was the only American lost – he is still listed as Missing in Action.

The entire Lae wing of three chutai took off mid-morning on May 27, with the 1st and 2nd Chutai heading for Port Moresby in flights of six and nine fighters, respectively, while the 3rd Chutai loitered over the mountains north of the town ready to intercept any Airacobras that attempted to oppose the strafing attacks. The USAAF fighter units were again forewarned of the approaching threat, and seven 35th and ten 36th FS Airacobras scrambled for a furious 25-minute clash that drifted east of Port Moresby. 2Lt Alva Hawkins disappeared during this action, his fighter (P-39F 41-7153) last being seen entering cloud over the sea five to ten miles south of the

V-105

PREVIOUS PAGES
A Tainan Kokutai A6M2 Zero-sen of the 1st Chutai breaks away from an early morning patrol to engage a pair of P-39Ds from the 8th FG as they fly low over the Markham River in the direction of Lae airfield in May 1942. All aircraft assigned to the 1st Chutai bore a red sash on the fuselage, with the fighter flown by the buntaicho featuring two sashes to denote its pilot's seniority within the unit.

village of Rigo. Capt T. W. Hornsby ditched P-39F 41-7162 nearby, and despite bruises, an energetic swim saw him make it to shore. It is possible that Hornsby might have been accidentally dispatched by fellow flyer Capt Wyatt Exum, who mistakenly fired at an Airacobra that he thought was an enemy fighter.

The following morning the IJNAF launched another maximum effort raid when, at 0710 hrs, 26 Zero-sen took off in three chutai, with the lead chutai under the command of hikotaicho Lt Cdr Tadashi Nakajima, the second chutai led by Lt Shiro Kawai, and the third by Lt(jg) Joji Yamashita. Shortly after takeoff Kawai aborted, and WO Satoshi Yoshino duly took his place. A 30-minute combat ensued with Port Moresby's Airacobras. Capt Wyatt Exum had several gun solenoids fail (in P-39F 41-7190), leaving him unable to charge his weaponry, and hits from Zero-sen bullets covered his cockpit in oil and shattered the throttle quadrant, leaving his propeller in fine pitch. Exum descended quickly and bailed out at 500ft. Upon landing in kunai grass, he quickly ran for cover. 2Lt J. F. Ward, his fighter (P-39D 41-6970) having also been shot up, bellied-in behind the beach at Gaile village, 25 miles southeast of Port Moresby, but he was back at 7-Mile Drome by late afternoon.

"Art" Andres, who, that morning, was flying his first mission since his long trip back from Buna on April 30, also fell victim to a Zero-sen:

> At about 5,000ft I bailed out [of P-400 BX168]. The Japanese shot me in the parachute and hit me in the leg, not too bad, but enough to keep me from flying for a month or so.

The Tainan pilots later reported that they had encountered 20 fighters, including misidentified "Spitfires."

On May 29 the Zero-sen again fought the Airacobras, this time 50 miles southeast of Port Moresby overhead Hood Bay. Two full chutai (led by Lt Masao Yamashita and Lt(jg) Jun'ichi Sasai) of 18 fighters took off from Lae at 0730 hrs. Unusually, both Sasai and the leader of his second shotai, WO Sahei Yamashita, aborted and returned to Lae. Although heavy rain over the mountains delayed the progress of the fighter force south, the Zero-sen and Airacobras eventually became engaged in an intense 30-minute combat. During the course of the fight 2Lt Don McGee saw a lone B-17 being pursued by a solitary Zero-sen, whose pilot then turned on him and chased his Airacobra into a thick cumulus. Turbulence shook McGee's Airacobra violently, and he was given a fright when he emerged from cloud very close to hills. Meanwhile 36th FS pilot 2Lt Grover Gholson had bailed out (of P-39F 41-7116) after being intercepted by a Zero-sen at around 20,000ft:

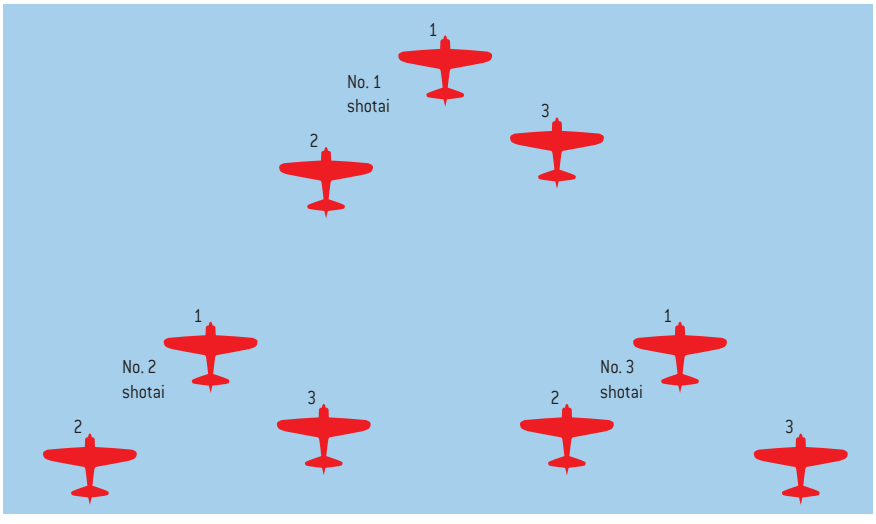
WO Satoshi Yoshino was serving with the Chitose Kokutai in the Marshall Islands when the Pacific War commenced, and weeks later he joined the A5M-equipped 4th Kokutai at Rabaul. Transferred to the Tainan Kokutai when it arrived in-theater in April of that year, Yoshino had by then been credited with several victories. He had taken his score to 15 (although in actuality his tally was only 3.4 victories) by the time he was killed in action on June 11, 1942 when his fighter was hit by a cannon shell fired by future ace 2Lt Curran "Jack" Jones of the 39th FS.

> While making a climbing pass at one, my P-39D stalled out and spun. While coming out of the spin, my plane was hit. I suffered bad burns on both arms, and bailed out about 20 miles inland from the coast.

Gholson yanked the starboard door release and lunged out head-first. As he tumbled out, the door latch cut his right arm badly. He delayed opening his parachute to prevent being strafed, then dropped onto a grassy knoll.

The IJNAF lost two Zero-sen on the 29th, but only one of these was as a result of aerial combat. His fighter having sustained battle damage,

FPO2c Hisao Komori struggled northwards over the mountains to reach New Guinea's northeastern shore, where he force-landed. That afternoon a radio message was received at Port Moresby from the coastal outpost of Ambasi stating that a Japanese fighter had crash-landed nearby and its pilot had been shot. Komori, having extricated himself from his downed fighter, had asked a villager to get him a native canoe so that he could head for Salamaua. An Australian soldier soon appeared on the scene, however, and shot the pilot when he resisted arrest. The second fighter to be lost was from Yamashita's chutai, the Zero-sen being written off in a landing mishap upon its return to Lae at the end of the mission.



Zero-sen formation
Throughout 1942 the IJNAF used the three-aircraft shotai as a standard fighter formation, ideally with three shotai per chutai, as portrayed here. Due to Zero-sen shortages in New Guinea, however, three-shotai operations were infrequent. Accordingly, standing patrols were often flown with only two Zero-sen to a shotai, or missions undertaken with odd numbers of aircraft – e.g. a five-aircraft chutai would comprise one shotai of three and the other of two. In summary, operational exigencies dictated structures for the Japanese units in the field more than IJNAF doctrine.

At 0745 hrs on June 1, 19 "Nell" bombers from the Genzan Kokutai departed Vunakanau for Port Moresby. Forty-five minutes later, 12 Tainan Kokutai Zero-sen took off from Lakunai led by Lt Shiro Kawai. Three of the fighters aborted, leaving only nine to protect the bombers. A supplementary force of 12 Zero-sen left Lae mid-morning, consisting of two chutai led by Lt Masao Yamashita and Lt(jg) Jun'ichi Sasai. After one bomber aborted, the remaining 18 "Nells" rendezvoused with 21 Zero-sen at 1100 hrs, and the large formation was soon detected by Allied spotters. This again gave Port Moresby's Airacobra units plenty of time to mobilize.

The IJNAF aircraft were intercepted by 30 USAAF fighters, led by a detachment from the 36th FS, and as they neared Port Moresby at 1140 hrs, a wide-ranging combat between Airacobras and Zero-sen ensued from sea level up to 15,000ft whilst the "Nells" expended their ordnance from 20,000ft. The bombs narrowly missed US Navy merchantman *Coast Farmer* anchored off the town's main T-shaped wharf. As the Airacobras attacked the G3M2s just after they had completed their bombing run, a well-aimed cannon shell from one of the USAAF fighters caused the A6M of WO Gitaro Miyazaki to explode. The fiery wreckage spun down and hit the ground near Rorona airfield to the west of Port Moresby.

Most of the surviving Zero-sen had left the area by 1210 hrs and landed at Lae by 1300 hrs, where a second fighter was written off in two days when AFPO3c Masami Arai's aircraft fell victim to the cratered runway.

Once again both sides made unsubstantiated claims following this clash. For the Japanese, the only combat loss was Miyazaki, whilst the USAAF lost three Airacobras. 36th FS pilot 2Lt Thomas Rooney, who became separated from his flight and failed to return, remains classified as missing in action. He almost certainly crashed into the sea in P-39D 41-6942 west of Port Moresby. Squadronmate Capt Bill Bennett was credited with a bomber destroyed, although none were in fact lost. Bennett had passed through

A 35th FS P-400, complete with a blue tail tip identification marking, undergoes repairs at 7-Mile Drome in mid-1942. Outdoor maintenance was the only option available to hardworking groundcrew at this time. Taxiing aircraft across rough ground like this took its toll on Airacobra undercarriages, and the slender nose gear oleo in particular.

the "Nell" formation at such a speed that it is likely he failed to draw the distinction between a bomber and a fighter, thus destroying the A6M flown by Miyazaki.

Two 35th FS pilots also failed to return, 2Lt William Hosford crashing into the water in P-39F 41-7200 near Fairfax Harbour and 2Lt Gentry Plunkett simply disappearing in P-39F 41-7194, or so it seemed. Three days later he reappeared to tell his tale of survival. A shotai of Zero-sen had separated him from his flight, crafting their attacks to isolate him and then forcing him to jump from his fighter. Plunkett was knocked unconscious when his parachute deployed, and when he came to he found himself lodged in a tree. With no discernible injuries, save a headache, he began scything his way through savannah. A few days later he found a river, where a crocodile inflicted a painful and bleeding shoulder wound. Plunkett finally made it to the coast, where villagers helped him return to Port Moresby.

On June 2 the first contingent of 39th FS Airacobras arrived at Port Moresby's 12- and 14-Mile Dromes. Earlier that day, 16 Lae-based Zero-sen led by Lt(jg) Joji Yamashita attempted to strafe the town at 1140 hrs, fleetingly encountering 20 Airacobras. Neither side incurred losses, despite the IJNAF pilots claiming three victories.

A USAAF bombing mission in New Guinea seven days later would make headlines in the US press. One of the participants in the operation was congressman, and future US President, Lyndon Baines Johnson, who, despite being awarded a Silver Star for alleged participation in combat, never actually sighted the enemy. A coterie of other VIPs also took part in the mission, including Lt Col Francis Stevens, who was assigned to the US War Department. Their participation in a raid against targets in enemy territory gave Allied commanders the challenging task of designing a mission that not only protected the VIPs, but also inflicted damage on the Japanese war effort.

The plan that the USAAF came up with would see B-17s and B-25s acting as a distraction for the Zero-sen force while VIP-carrying B-26s swept across Lae unchallenged. The Airacobras' limited range meant that they would have to loiter off Cape Ward Hunt, some distance southeast of Lae, waiting to attack the Zero-sen that would undoubtedly chase the retreating bombers as they headed back to Port Moresby. When the mission was flown on June 9, the planned sequencing of the aircraft over enemy territory became distorted and then fickle weather posed more problems. Finally, at Port Moresby, in a last-minute change, Congressman Johnson changed bombers, boarding B-26 40-1488 *HECKLIN' HARE* of the 19th BS/22nd BG. This particular Marauder turned back only 30 minutes after departure, however, due to a generator failure, meaning Johnson never got anywhere near combat.

Only two of the three planned B-17s from the 19th BG reached Lae at 30,000ft mid-morning to lure the Zero-sen aloft. The Flying Fortresses remained cloaked by overcast – which the B-25s duly bombed through from 16,000ft – meaning that the

B-17s were not sighted from the ground. Nevertheless, the Mitchells' bombing prompted 25 Zero-sen to scramble in staggered echelons at 0945 hrs. This was the greatest number of A6Ms the Lae fighter wing would ever launch, Lt Shiro Kawai, Lt(jg) Jun'ichi Sasai, and WO Satoshi Yoshino leading the three chutai aloft.

Zero-sen chased the fleeing Mitchells for 50 miles as the bombers flew southeast along the coast. However, the IJNAF pilots then unexpectedly countered the Allied diversion plan by switching their attention to the ten inbound Marauders. After bombing Salamaua, the B-26s descended in an attempt to accelerate away. A furious 35-minute running fight then ensued, during which the Marauders' gunners claimed 11 Zero-sen shot down. It appears that none were lost to the B-26s, however. The fighters in turn shot down the 22nd BG's B-26 40-1508 *THE VIRGINIAN* into the sea about 30 miles east of Lae, killing all on board, including Lt Col Francis Stevens.

Eighty miles down the coast, the fleeing Marauders led the Zero-sen directly into the path of eight Airacobras from the 39th FS that were staggered at various altitudes between 4,000 and 10,000ft. Led by 1Lt Donald Green, the USAAF fighter pilots had a clear altitude advantage for the Zero-sen were still harassing the Marauders at sea level. Furthermore, some of the Japanese pilots had exhausted their ammunition. 2Lt Curran "Jack" Jones made the most of this advantageous opportunity:

> I started firing short bursts. I realized my speed was getting low, but was too busy to be concerned. Most fortunately I saw what I think to be one of my 20mm shells explode in front of the cockpit. By then the Zero had sort of flattened out and there was a movement of the pilot as I approached, and I realized that he was climbing out of the cockpit. As I passed behind his crate, he was holding on to the cockpit and looking back at me and the nose of the Zero was just beginning to drop. I told the fellows that he looked at me as though I was the last man he would see alive.

Jones' words describe the final moments of WO Satoshi Yoshino, who was flying a Zero-sen marked with a double red fuselage sash – this was astutely observed by Jones. Yoshino, who was not yet a substantive buntaicho, had borrowed Lt Shiro Kawai's fighter for the mission.

At 1040 hrs, just as the Zero-sen broke away from the Marauders, another shotai was bounced by Airacobras. Future ace 2Lt Dick Suehr claimed a Zero-sen destroyed, this aircraft almost certainly being flown by FPO1c Sakyo Kikuchi, who was the second Japanese fatality of the day. The demands of this confrontation ran the Airacobras low on fuel, and once south of the Owen Stanleys 2Lt Eugene "Gene" Wahl force-landed P-400 "*WAHL EYE*" (serial unknown) on an isolated beach well east of Port Moresby, bruising his head on the gunsight. Stranded in the savannah, it took him an exhausting six days to ambulate back to his squadron. The trek also gave him numerous cuts and abrasions.

Meanwhile, back at 7-Mile Drome, two shot-up Marauders belly-landed, their bent airframes proof that the vouchsafed mission had gone awry.

An ambitious strike by Zero-sen on the morning of June 16 resulted in the biggest one-day loss for New Guinea's Airacobras. At 0740 hrs 21 fighters from the Tainan Kokutai took off from Lae and headed for Port Moresby, Lt Shiro Kawai, Lt(jg) Joji

The top-scoring Japanese ace to survive World War II, FPO1c Saburo Sakai joined the Tainan Kokutai in October 1941 following combat in China with the 12th Kokutai. He took part in aerial battles over the Philippines and the Dutch East Indies prior to accompanying the unit to Rabaul in April 1942. Having flown many sorties from both Rabaul and Lae, and enjoyed numerous aerial successes (including the confirmed destruction of at least two Airacobras) over New Guinea, Sakai was badly wounded by return fire from a US Navy SBD Dauntless on August 6, 1942 – the first day of the aerial battle for Guadalcanal. He was sent back to Japan to recuperate, having been officially credited with 28 victories up to that point in the war. Although Sakai briefly returned to combat in June 1944, failing eyesight soon saw him relegated to the role of instructor with the Yokosuka Kokutai.

Yamashita, and Lt(jg) Jun'ichi Sasai leading the 1st, 2nd, and 3rd Chutai, respectively. Forewarned by spotters, 32 Airacobras from the 39th and 40th FSs scrambled to meet them. FPO1c Saburo Sakai, accompanied by wingman FPO2c Masayoshi Yonekawa, recalled the combat that subsequently took place:

The formation disintegrated into a tremendous free-for-all directly above the Moresby air base. The enemy planes were new P-39s, faster and more maneuverable than the older models. I jumped on a fighter, which amazed me by flicking out of the way every time I fired a burst. We went around in the sky in a wild dogfight, the Airacobra pilot running through spins, loops, Immelmanns, dives, snap rolls, spirals, and other maneuvers. The pilot was superb, and with a better plane he might well have emerged the victor. But I kept narrowing the distance between our two planes with snap rolls to the left and clung grimly to his tail at less than 20 yards. Two short cannon bursts and the fighter exploded into flames. That would be my third victory for the day.

The fourth, which followed almost immediately after, was ridiculously simple. A P-39 flashed in front of me, paying attention only to the pursuing Zero which zoomed upward in a desperate climb, firing as he went. The Airacobra ran directly into my fire, and I poured 200 rounds of machine gun bullets into the nose. The fighter snapped into an evading roll. I was out of cannon shells, and fired a second burst into the belly. Still it would not fall, until a third burst caught the still-rolling plane in the cockpit. The glass erupted and I saw the pilot slam forward. The P-39 fell into a spin, then dove at great speed to explode in the jungle below.

On our way back, Yonekawa kept breaking formation. I understood why when he pulled alongside my own plane and held up two fingers, grinning broadly. Yonekawa was no longer the untried fledgling – now he had three planes to his credit. Lae went wild with victory that night. All the pilots were given extra rations of cigarettes and the mechanics swarmed over us to share our jubilation. We were to receive five days' leave at Rabaul, for which I was particularly relieved. Not only was I tired from the almost daily flights, but my engineers wanted several days to work on my fighter.

2Lt Harvey Rehrer of the 39th FS was one of the lucky survivors from this mission, having taken off as a replacement pilot from 14-Mile Drome. Whilst climbing to 22,000ft east of Port Moresby as "tail-end Charlie" his engine suddenly faltered. By then Japanese fighters had been sighted 3,000ft directly above the Airacobras, and they descended to attack. One latched onto Rehrer's tail and hit his drop tank with machine gun fire, causing it to burst into flames. Rehrer entered an inverted spin, kicked out the starboard door and bailed out of the fighter, dislocating his shoulder when his parachute opened. His Airacobra (P-39F 41-7204) crashed into the jungle near Brown River, Rehrer hearing ammunition exploding as the wreckage burned. After six days of negotiating his way along the riverbank he came to a village, from where he was escorted back to his squadron. Rehrer's week-long safari earned him medical evacuation to Townsville.

1Lt Tommy Lynch would also be forced to take to his parachute on June 16. Released for flying duty after suffering from dengue fever, he took off late in P-400 AP348 and headed for Rigo in an attempt to catch up with his squadronmates. En route, his lone fighter was bounced by three Zero-sen, which he evaded by diving away. Lynch was then set upon by four more A6Ms, and this time his fighter was damaged. Nevertheless, he managed to shake them off too before heading back to 7-Mile Drome. Prior to reaching the strip, and while still over the coast, Lynch's engine seized at 7,000ft. Parachuting into Bootless Bay from just 800ft, he was rescued by natives in a canoe and soon receiving medical treatment for a broken arm – Lynch had hit the tailplane as he bailed out.

1Lt William Hutcheson of the 40th FS was also shot down in P-39F 41-7222, having been bounced from behind while he was switching tanks. Bailing out into a swamp, he survived being strafed whilst crouching in the mud. Hutcheson finally reached 30-Mile Drome by canoe on the morning of June 18.

There were also two fatalities on June 16, both from the 40th FS. 2Lt Paul Magre, in P-39D 41-6941, was last sighted in the melee overhead Hercules Bay. The crumpled wreckage of his fighter was later found washed up near Bau village by an Australian patrol, with parts of Magre still inside. 2Lt Stanley Rice, at the controls of P-39D 41-7136, was last seen east of Redscar Bay, and he and his aircraft remain missing to this day. The CO of the 40th FS, 1Lt Stephen Smith, was wounded in this one-sided engagement, as was his squadronmate 2Lt "Spence" Johnson. Both men managed to return to base in their damaged Airacobras, however.

That same afternoon 16 Zero-sen, led by Lt Shiro Kawai and Lt(jg) Joji Yamashita, intercepted two flights of Marauders from the 22nd BG near Lae. The plan was for ten Airacobras from the 39th and 40th FSs that had fought in Port Moresby skies that morning to intercept the IJNAF fighters if they pursued the B-26s south beyond Cape Ward Hunt, and that is precisely what happened. The Airacobras bounced nine pursuing Zero-sen at 1345 hrs, 1Lt Francis Royal, who had led the 39th FS in the morning's defense of Port Moresby, shooting down the inexperienced Sea1c Takeichiro Hidaka.

On June 17, 11 Airacobras (seven of which were P-400s) from the 39th FS scrambled mid-morning to intercept an inbound formation of 18 Genzan Kokutai G3M2s escorted by 12 Tainan Kokutai Zero-sen in two chutai led by Lt(jg) Joji Yamashita and Lt(jg) Jun'ichi Sasai. The 40th FS was now based at 5-Mile Strip, from which both the 35th and 36th FSs had previously operated, but the 39th FS was split evenly between the relatively new 12-Mile and 14-Mile strips. This meant that some pilots had to canoe across the Laloki River to get to the flightline.

The 39th FS fighters were led aloft by future ace 1Lt Charles King, accompanied by 2Lt Dick Suehr, who would also later attain ace status. Ground Control instructed them to climb along the coast, telling King that there were "bogies" at "three o'clock" – he saw no aircraft, however. King continued turning in the direction of the enemy when the call was changed to "nine o'clock." During one of the slow turns between 21,000 and 23,000ft, the Airacobras suddenly found themselves in the middle of the "Nell" bomber formation, as King later recalled:

> I was so much in the middle of them and still climbing at such a slow speed that my first opportunity to shoot at a bomber was lost in a mushing turn that carried me past the

formation before I was close enough to any bomber to fire. At almost the same moment, I became aware that the bombers were not alone. Dead ahead and about 2,500ft higher was something to shoot at. Three Zeros were diving at me in a vee formation. To bring my guns to bear, I had to pull my nose even higher and hope that I didn't stall out before they were in my range and, of course, I was in their range. All of the guns of the P-400 were on one trigger and, although it didn't happen often in those early days, all of mine fired. My burst was long enough that all 60 rounds in the drum of the 20mm cannon were used up. Of course the barrel was ruined. However, I saw some of my bullets stream into the fuselage of the Number Three Zero.

I knew that I was about to stall and that I was no longer a threat to either the bombers or the three Zeros. I had heard enough from the Aussies and pilots from the two US squadrons who had preceded us at Port Moresby and suffered 30 to 80 percent losses that, unless I did something quick, I was going to have a couple of Zeros on my tail. After passing them and going into a virtual stall, I pushed over as hard as I could and was soon going down vertically in a screaming dive to avoid my three attackers. My cockpit was immediately filled with debris.

Was what I saw Japanese bullets and their results flying through the cockpit? My fears seemed confirmed when I felt a warm liquid – blood? – flowing across my face. I was able to level out at much lower altitude, still in control. As I cleared my tail, I realized that the warm liquid on my face was not blood. The small high-pressure oxygen masks we used back then tended to collect moisture, and the G-forces of my dive had forced water from under the mask and across my face. The debris was not Japanese lead, but the collected dirt of New Guinea that the same G-forces had spread around the cockpit.

Neither side suffered losses despite the best efforts of King and Suehr.

The following day nine Zero-sen took off from Lae during the late morning to engage eight Airacobras from the 39th FS in a 40-minute clash both west and north of Port Moresby. 1Lt Carl Rauch bailed out of P-400 BX169 into an expansive and crocodile-infested swamp near the Vanapa River and was lucky to survive. He took four days to return home, assisted by villagers. Equally lucky was 1Lt George Bartlett, who bailed out of P-39F 41-7140 over foothills when his engine was shot out. He returned to his unit with the help of Australian soldiers.

The third Airacobra loss that day was P-400 AC361 flown by 1Lt Donald Green, whose cannon initially failed when he tried to fire it. Overhead Schwimmer Drome at the time, he dove into cloud and frantically tried to get his M1 weapon working. When he emerged into clearer skies shortly thereafter, Green spotted two Zero-sen ahead and below him. He duly fired his recharged cannon at both machines and was later awarded two victories, although the IJNAF suffered no losses on this date. Green was then set upon by another Zero-sen and forced to bail out, injuring his back in the process. Although the USAAF had three Airacobras on June 18 without reply, the Tainan Kokutai claimed only two destroyed – one apiece to future aces WO Sahei Yamashita and FPO1c Toshio Ota.

Following this action Lae's Zero-sen were stood down for almost a week due to the need to perform urgent maintenance on the hardworking fighters.

On June 25 the Tainan Kokutai marked its return to combat operations when it sortied no fewer than 21 Zero-sen (every serviceable A6M on base) from Lae. Led by

hikotaicho Lt Cdr Tadashi Nakajima, the aircraft reached Port Moresby just after midday. Within minutes the IJNAF pilots had become embroiled in the largest dogfight ever seen over the town. Scrambling from several different airfields, 28 Airacobras conducted a fragmented defense. 39th FS pilot 2Lt Robert Rose did not get far, however, as his Airacobra struck a log at the end of the 12-Mile strip on takeoff. The fighter lurched in flames at high speed across the Laloki River and rendered Rose unconscious upon impact on the other side.

The Zero-sen loitered overhead after the Airacobras had dispersed. A returning P-400 flown by an unidentified pilot was set upon by 15 A6Ms as it approached Rorona airfield some 30 miles to the west of the town. Narrowly avoiding destruction during this initial encounter, the Airacobra was then attacked by five more enemy fighters as it taxied in after landing, resulting in the aircraft being badly damaged. Two more P-400s were also damaged during the battle, although neither side incurred losses despite generous claims. Nakajima's men stated that they had destroyed ten Airacobras, whilst USAAF claims of six probables contrast with the reality that not a single American bullet hit an enemy airframe.

The following day the 39th and 40th FSs assumed full responsibility for the defense of Port Moresby after the 35th and 36th FSs were sent back to Australia for a period of rest. The 39th FS would subsequently rotate back to Australia on August 15 to re-equip with the P-38F Lightning, not returning to Port Moresby until October 18.

June 26 also saw the 40th FS's 1Lt William Stauter (in P-39F 41-7137) listed as missing in action after the unit clashed with Lt Shiro Kawai's Zero-sen escort for 20 G3M2s of the Genzan Kokutai. Eleven A6Ms then strafed Port Moresby before escorting the bombers home. Kawai's pilots claimed three Airacobras destroyed and two probables, but Stauter's fighter was the only loss suffered by the USAAF.

During late June and early July the IJNAF was tasked with ascertaining the condition of the tracks from New Guinea's northern coast down to Port Moresby, as it was hoped that they could support vehicular traffic when Japanese forces pressed south. The Tainan Kokutai's C5M2 "Babs" land-reconnaissance aircraft would conduct the initial surveys of the Kokoda Track, escorted by one or more Zero-sen – the mission on June 28 was flown by FPO1c Saburo Sakai and by Lt Shiro Kawai two days later. On July 3 shotaicho Lt(jg) Katsumi Kurihara and two other Zero-sen pilots escorted a C5M2 to Kokoda. After the "Babs" turned for home, Kurihara's shotai continued on to Port Moresby looking for trouble. They found it there 20 minutes later, reporting contact with 13 Airacobras. One of the Zero-sen sustained a single bullet hit during an unsuccessful diving attack against three of the USAAF fighters, which were engaged at between 18,000 and 20,000ft.

INDEPENDENCE DAY CELEBRATIONS

On July 4, American Independence Day was celebrated even in wartime Port Moresby. Mid-morning, 16 Marauders launched from 7-Mile on the first of two missions against Lae – the second raid was the take place two hours later. Three chutai of Zero-sen (totaling 20 aircraft) scrambled from Lae following the first attack, the fighters being led by buntaicho Lt Shiro Kawai, with Lt(jg) Joji Yamashita and Lt(jg) Jun'ichi Sasai heading the remaining two chutai. They arrived overhead Port

Like fellow New Guinea ace WO Satoshi Yoshino, WO Sahei Yamashita was serving with the Chitose Kokutai in the Marshall Islands at the start of the Pacific War. He was then detached to the Tainan Kokutai in Rabaul in April 1942, his formal transfer to the latter unit late the following month coinciding with a posting to Lae. Seeing considerable action over eastern New Guinea and Guadalcanal during the second half of 1942, Yamashita had been credited with 13 victories by the time the Tainan (251st) Kokutai was transported back to Japan in November of that year. Yamashita did not return home, however, being posted instead to the 201st Kokutai in Micronesia. On February 9, 1943 he and four other Zero-sen pilots were involved in the interception of a USAAF B-17 that was attempting to photograph IJNAF installations on Nauru Island. Although the Flying Fortress was shot down, Yamashita failed to return from the mission.

ENGAGING THE ENEMY

The Zero-sen enjoyed superior maneuverability to all models of Airacobra at low to medium altitudes, allowing IJNAF pilots to get in substantive bursts of fire if making stern attacks. Whilst the A6M2 was armed with two 20mm cannon, considerable skill was required for the pilot to hit moving targets with the slow-firing weapons. Furthermore, its two low-caliber 7.7mm machine guns often lacked impact against well-armored Allied aircraft, and most pilots would have preferred to have had four heavier-caliber machine guns instead as a weapons configuration.

All A6M2s were fitted with the IJNAF Type 98 Reflector Gunsight, which featured an illuminated circular reticule. This gunsight, developed specifically by the IJNAF, replaced previous telescopic sights, and was effective, although the reflector sight offered only a limited field of view. The memoirs of Japanese pilots indicate that downing an Airacobra was most easily achieved by aiming for the pilot, and this was the focus of most combats. Hits to the hardy Allison engine often did minimal damage. Indeed, it usually took a direct cannon strike to shut the engine down. Similarly, damage inflicted to the V-1710's vitally important cooling system would see the engine overheat and seize up in a very short space of time.

A particular problem for both sides was that the cockpit Perspex would often fog up badly during dives to low altitude because of the high humidity of New Guinea's tropical air. Zero-sen pilots could more quickly resolve this issue by sliding back the canopy to let in air, and thus equalize the humidity. There are several accounts by Airacobra pilots describing how they were left completely blind-sighted by this problem until they could wipe clear the Perspex. Another phenomenon caused by the high humidity was the appearance of white vapor trails from the trailing edges of the wingtips during high-speed turns. In many cases pilots from both sides mistook these trails for smoke, believing that they had hit their opponent.

Moresby just in time to trigger a red alert, with the B-26s preparing for the second Lae strike desperately attempting to clear the runways and taxiways at 7-Mile.

While the Sasai Chutai loitered north of Port Moresby in a defensive position, the remaining Zero-sen engaged 13 Airacobras from the 39th FS over the town itself. The USAAF fighters, patrolling at 21,000ft, were led into action by unit CO Maj Jack Berry. Many more had taken off, however – one aborted, two failed to gain sufficient altitude to engage the A6Ms, and eight others missed the enemy fighters altogether. Nonetheless, a determined dogfight spread from 12-Mile strip as far as Rorona (30-Mile) Field, when the Airacobras were badly bounced from above. 1Lt Charles King broke left as a Zero-sen came down in a hard dive directly behind him. He half-rolled downwards and fired straight ahead at his adversary when it shot past. He then sought cloud cover, as the performance of his fighter's propeller had been badly degraded by a damaged electric variable pitch mechanism. Once King got back to 7-Mile he found that he could not lower his flaps either, ensuring his landing was a "hot" one.

2Lt John Price's fighter was also badly damaged, and both Maj Berry and 2Lt Charles Sullivan were forced to elude their pursuers by diving into cloud.

The battle cost the 39th FS three Airacobras. 2Lt James Foster, in P-39F 41-7148, bailed out about 30 miles northwest of Port Moresby and soon made it home. 2Lt Frank Angier was attacked in the same area as Foster and force-landed P-400 AP378 close to the coastal village of Boera. He too quickly returned to base. The third unlucky pilot was 2Lt Wilmott Marlott, who bailed out of P-400 BX180 30 miles inland. He also found his way back home unscathed. In terms of pilot survival at least, it was the 39th FS's luckiest day. 2Lt Francis Royal's Airacobra was slightly damaged when he successfully distracted circling Zero-sen that were apparently intent on strafing either Foster or Angier.

All 20 Zero-sen returned safely to Lae at 1215 hrs, with WO Tora'ichi Takatsuka diverting via Salamaua. The mounts of FPO3c Masami Arai and FPO3c Hiroshi Okano were each holed by a single bullet.

During the early morning of July 6, 15 Zero-sen from the Yamashita and Sasai Chutai headed eastwards from Lae to rendezvous with 21 G4M1 bombers sortied from Vunakanau. Port Moresby's air-raid sirens sounded at 0902 hrs, and six minutes later 17 Airacobras from the 39th and 40th FSs climbed northwards to intercept the incoming combined formation. Thirty minutes after the "Bettys" had made two separate bombing runs, a single G4M1 escorted by two Zero-sen made an unexpected pass over the town at 6,000ft from 12-Mile Drome to Bootless Inlet. The bombers had finished their work before they could be intercepted, although the Airacobra pilots were ordered to pursue the retreating "Bettys" back over the mountains.

Thus, while eight 39th FS Airacobras remained in Port Moresby skies in case further attacks were launched, nine fighters from the 40th FS pursued the retiring bombers cruising at 21,000ft. Six of Yamashita's Zero-sen escorted the G4M1s, with three above and three to the rear, and two more accompanying the lone bomber that had made its late run over Port Moresby. Airacobras caught Yamashita's fighters by surprise from the rear, forcing one "Betty" to break and head for Lae shortly thereafter, followed by three 40th FS Airacobras, which met four Zero-sen led by Sasai – the remaining three fighters were flown by FPO2c Ichirobei Yamazaki, FPO3c Masuaki Endo, and FPO3c Masami Arai. The combat report compiled by the squadron duly noted:

FPO3c Masuaki Endo completed his flying training just two months before the outbreak of war in the Pacific, being posted to the Tainan Kokutai in February 1942. Flying from Lae and Rabaul, he fought with the unit until it was sent back to Japan at the end of the year, having claimed a number of victories. In May 1943 Endo returned to Rabaul with the 251st Kokutai and subsequently took part in many operations, raising his official tally to 12 victories. On June 7 he participated in a 36-fighter attack on the Russell Islands that saw his unit heavily engaged by USAAF P-38s and P-39s. Having shot down a Lightning for his 13th victory, Endo was then bounced by an Airacobra and his fighter badly shot up just moments before the ace was killed in a mid-air collision with another P-39.

WO Tora'ichi Takatsuka was a veteran of the China Incident on September 13, 1940, when 13 A6M2s attached to the 12th Kokutai attacked 27 Polikarpov I-15 and I-16 fighters of the Chinese Nationalist Air Force and downed all of them without loss. These were the first aerial victories credited to the Zero-sen, and Takatsuka had claimed three of them. Having briefly retired from active duty in October 1941, he was re-mobilized two months later and sent to the Tainan Kokutai. Surviving the aerial combat of 1942, Takatsuka returned with the unit to Japan at the end of that year, only to see more action from Rabaul with the 251st Kokutai from June 1943. By the time of his death in a raid on Guadalcanal on September 13, 1943, he had been credited with 16 victories

> After leaving enemy [bombers] we were attacked by four Zero-sen lingering around Kokoda Pass. Our flight of three ships were at approximately 19,000ft when attacked. M.P. [manifold pressure] 45 inches; indicated airspeed 350mph in gentle dive.

2Lt Howard Welker (flying P-400 AP377) failed to regroup with the other Airacobras for the Port Moresby return. None of his comrades – all of whom landed safely back at Port Moresby by 1055 hrs – saw what had happened to him. Meanwhile, villagers not far from the Gona Anglican mission witnessed an aerial combat, and one of them later related what he had seen to Father Benson, who wrote in his memoirs:

> An American fighter flew low overhead heading towards Buna. I watched him until he was almost out of sight. I saw the pilot was heading for another plane far out to sea. I saw them circling, and heard the distant rattle of gunfire, then three other planes came diving out of the cloud, and the American returned on fire and losing height. He came over the palm trees just above our heads. I think perhaps he was trying to land on the playing-field, but it was all over in a flash. I saw something white fall from the plane, then trees blocked my vision.

Welker had bailed out too low, which meant that his parachute only partially opened. His crumpled body was later found by the two Anglican sisters at the foot of a tulip tree along the southern side of the church. Benson continued:

> While the two sisters carried the body of the pilot into the church, I rushed towards the creek, but I saw at once that the plane was a single-seater and there was nothing I could do.

Benson later buried him in the mission's small cemetery. Welker had been pitted against four of Japan's most skilled and aggressive Zero-sen pilots.

Four days later, 21 "Bettys" from the 4th Kokutai launched from Vunakanau airfield at 0700 hrs, escorted by 12 Rabaul-based Zero-sen led by Lt(jg) Joji Yamashita – about two hours later they rendezvoused over Cape Nelson with the bombers. Six more Zero-sen from Lae, led by WO Tora'ichi Takatsuka, made for Cape Ward Hunt with the aim of surprising Allied fighters that might be lurking there. Although 11 Airacobras from the 35th FG did indeed scramble in an attempt to engage the bombers, they could not climb quickly enough to intercept the "Bettys" over Port Moresby. The bombers were accurately targeted by heavy AA fire from Australian 3.7in gun batteries, however, causing the formation to break up. The lead bomber was soon hit, bursting into flames. This in turn caused the tail gunner to jump from the blazing aircraft without a parachute, the G4M1 crashing offshore Gaile village shortly thereafter. WO Tora'ichi Takatsuka's six Zero-sen patrolled Cape Ward Hunt until 1100 hrs, having failed to find any USAAF fighters.

On July 11 Rabaul's Zero-sen pilots again escorted 21 "Bettys" from the 4th Kokutai to Port Moresby. Twelve Zero-sen, led by Lt(jg) Joji Yamashita, launched from Lakunai, while Lt(jg) Jun'ichi Sasai led his shotai in an interception of six 19th BG B-17Es near Cape Cretin, which they fought for five minutes. Sasai's shotai returned to Lakunai shortly thereafter. Meanwhile, at 1038 hrs, the main Zero-sen formation, now down to nine fighters, was sighted over Cape Ward Hunt. Coordination between the A6M pilots and the bomber crews proved to be unsatisfactory, however, and they failed to rendezvous.

Nonetheless, Port Moresby's 71st air raid commenced, with the G4M1s making their pass over the town from the southwest at about 23,000ft.

Forewarned, 23 Airacobra pilots scrambled to meet the bombers. The engine in 2Lt Edward Gignac's P-400 BW117 of the 40th FS failed, and he force-landed at speed in an open plain near 30-Mile Drome (Rorona). The Airacobra broke up when it hit the ground, badly injuring Gignac who later returned to the US for recuperation. The rest of the Airacobra scramble did not go well either, with no fewer than seven fighters returning to base with mechanical problems, whilst five more failed to locate the enemy. Despite their depleted numbers, the USAAF pilots managed to hit the Japanese bombers six times, wounding eight crew.

Thirty minutes after the "Bettys" had been engaged by the Airacobras, the "errant" Zero-sen belatedly entered the fray, and they ensured that all of the bombers made it home. The last A6Ms to return to base comprised the Yamashita shotai, which landed at Lakunai at 1630 hrs after detouring via Lae to refuel. In the confusion of combat 40th FS pilot 2Lt Orville Kirtland went missing in his unidentified P-400. He almost certainly fell victim to either FPO1c Hiroyoshi Nishizawa or FPO3c Kazushi Uto, both of whom would become aces.

On July 20 the first detachment of 80th FS Airacobras reached Port Moresby, this unit being the last of the 8th FG's squadrons to arrive in New Guinea. Similarly, the 41st FS flew in shortly thereafter, it too being the final squadron from the 35th FG to be posted into action. The 41st would relocate to Milne Bay on November 8. On the same day that the 80th FS joined the defense of Port Moresby, 26 "Bettys" from the 4th Kokutai, complete with a Zero-sen escort, approached the town at 1100 hrs. The subsequent attack was uncontested by Airacobras, and the fighters soon broke away for Lae, where they landed at 1215 hrs after battling through marginal weather.

After refueling there, the aircraft took off for Rabaul, but shotaicho WO Sahei Yamashita soon decided it was too risky to proceed and headed back to Lae, losing his two wingmen in the process. FPO1c Katsumi Kobayashi and FPO3c Yoshimi Onishi had instead attached themselves to shotaicho Lt(jg) Katsumi Kurihara, and FPO2c Un'ichi Miya soon became the fourth member of this flight. All four pilots, who had recently joined the Tainan Kokutai from the Chitose Kokutai on Wake Island, disappeared in the capricious conditions. This incident marks the largest weather-related loss of Zero-sen in New Guinea in 1942.

P-400 *Catherine*, operated by the 41st FS (note the bald eagle unit badge on the fighter's nose), was lifted sideways by the blast of a detonating bomb at Port Moresby during a raid on 7-Mile Drome in July 1942. Its damaged left undercarriage leg, which collapsed when the fighter was moved, was quickly repaired and the aircraft returned to airworthiness.

Port Moresby had been similarly afflicted

Airacobras from the 80th FS were adorned with a sharksmouth marking, these examples being seen at 14-Mile Drome. The last of the 8th FG's squadrons to enter combat, the unit arrived at Port Moresby on July 20, 1942.

by marginal conditions that same morning. Two 39th FS Airacobras were eventually dispatched to reconnoiter the weather over Lae and Salamaua, one of the fighters being flown by 2Lt Frank Angier. During the course of the mission engine trouble forced Angier down in the Cape Nelson area on the northern coastline, from where he later returned to his unit with the assistance of villagers.

THE KOKODA CAMPAIGN

Allocated the codename *RI Sakusen* by the Japanese, the offloading of the Port Moresby-bound Nankai Butai (South Seas Force) on the gray sands at Gona on July 21 would invite much aerial combat. The Japanese thrust over the island's middle mountain spine via Kokoda exclusively involved the Nankai Butai, while the Kawaguchi Force (124th Regiment) was tasked with capturing the eastern Allied base at Milne Bay, from where they would strike westwards at Port Moresby. A diverse landing force brought ashore thousands of Japanese troops on Buna beach, along with 100 Formosan laborers, 1,200 conscripted Tolai tribesmen from New Britain, and 52 horses.

The following day, both the RAAF and USAAF became directly involved in what would become known as the Kokoda campaign. With the recent return of the 35th and 36th FSs to Australia, Port Moresby's remaining four Airacobra squadrons – the 39th, 40th, 41st, and 80th – were placed on full alert. All available American and Australian fighters were dispatched to strafe the landings and provide bomber escort.

A gaggle of four 40th FS P-400s was first away on the 22nd, assembling over Port Moresby at 0900 hrs before heading for the Kokoda Gap. Once on the northern side of the mountains, they strafed unloading barges and received return ground fire. The 80th FS joined them shortly thereafter, the squadron combat report for the mission noting:

> These boys went right to work strafing a convoy off Buna and barges in the area, covering B-25s striking the same place. In fact they had a nice baptism of fire. On this mission they lost Lt Hunter, [who was] apparently hit by heavy ack-ack, and [he] bailed out of his plane.

David "Pinky" Hunter was the 80th FS's first combat loss. Jettisoning the starboard door of his fighter (P-39F 41-7143), he tumbled out backward and eventually made it ashore. Captured, having suffered "light wounds" according to Japanese records, he was shipped to Rabaul in early August. There, Hunter was executed at the foot of Tavurvur volcano – the established location for prisoner executions.

Later that afternoon the 39th FS launched a gaggle of P-400s to again strafe the beachhead, losing 1Lt Gentry Plunkett (in an unidentified fighter) after he ditched

some three miles out to sea following AA hits on his Airacobra. He remains listed as Missing in Action.

Vice-Admiral Gun'ichi Mikawa, commander of the IJN's recently formed 8th Fleet which was supporting the New Guinea campaign, ordered an airfield constructed at Buna in an effort to consolidate the landing. On July 23, 600 soldiers and laborers duly disembarked here, their ranks bolstered by two subsequent reinforcements totaling 900 men. Two poorly drained airfields were quickly created, supplemented by several dirt revetments and AA installations. Importantly for the IJNAF, Buna was only a third of the distance to Port Moresby that Lae was. Nonetheless, the primitive conditions at Buna limited its use throughout the campaign.

Capricious weather over the Buna beachhead cost the life of 40th FS pilot 2Lt Garth Cottam flying P-39D-1 41-38353 *Papuan Panic!* on July 23, 1942. The pilot seen here is 2Lt John Jones, although the fighter was actually assigned to 1Lt James Selzer. Despite no one seeing Cottam crash (there were three other Airacobras from the 40th FS in the immediate area at the time), the consensus was that he had flown into one of the cloud-shrouded inland ranges whilst attempting to find the target.

Meanwhile, Allied efforts against the landing force continued. Despite fickle weather over northern New Guinea on July 23, a quartet of 40th FS Airacobras took off from Port Moresby to again strafe the beachhead. 2Lt Garth Cottam, in P-39D 41-38353 *Papuan Panic*, went missing after he pressed on through the murk when his squadronmates turned back. His last broadcast was to warn those following him that they should return to base due to the weather.

Following the surprise Japanese landing at Gona, eight "retired" A-24 Banshee dive-bombers (the USAAF's equivalent of the US Navy's SBD Dauntless) of the 8th BS/3rd BG were dispatched to Port Moresby, from where they launched an attack against the Buna beachhead on July 24. Led into action by unit CO Maj Floyd "Buck" Rogers, the performance of the A-24 crews during the mission drew praise from 1Lt Charles King, who flew one of the escorting 39th FS P-400s. He wrote in his diary that this mission was a "model of precision attack and formation flying."

The key to the successful prosecution of this particular attack, however, was a complete lack of fighter opposition, with the A6Ms being otherwise engaged escorting a "Betty" raid on Port Moresby, despite ongoing bad weather. The attack, carried out by 23 G4M1s of the 4th Kokutai protected by 15 Zero-sen under the command of Lt Shiro Kawai, was designed to maintain pressure on Port Moresby and its aerial defenses. The IJNAF formation headed south at much the same time as the A-24s were taking off for Buna. Poor weather prevented sufficient warning by the spotters, and the Airacobras' poor rate of climb again hampered their pilots' best efforts to intercept the enemy aircraft.

At 0635 hrs the following day, Mitchell bombers took off from 7-Mile to bomb the Gona beachhead escorted by six 40th FS Airacobras that were each carrying a single 300lb bomb instead of a centerline tank. An untidy join-up over Port Moresby resulted in the Airacobras lagging two minutes behind the B-25s, which cruised ahead at 14,000ft. Meanwhile, nine Zero-sen of the Sasai Chutai also headed for the same beachhead, where they intercepted the Mitchells as they approached. The bomber

crews jettisoned their ordnance and reversed course for home, noting that after the individual fighters had attacked, the Zero-sen would chandelle upwards back into formation, before rolling across and down on the other side of the B-25s, firing as they went. It was an effective tactic, for every Mitchell sustained hits.

The Airacobras lagged too far behind to defend the bombers, two Mitchells eventually going down in flames before two of the Zero-sen pilots turned their attention to the USAAF fighters. During the first pass FPO2c Ichirobei Yamazaki shot down 2Lt Frank Beeson, who remained missing in action until April 3, 1943 when the burned-out wreckage of his unidentified P-400 was discovered near Buna with its 300lb bomb still attached. His nearby remains belied the tragedy that had unfolded after he had force-landed, for the intact magazine of his revolver, found on his body, was missing just one round. Sea1c Kihachi Ninomiya also claimed a probable, having almost certainly wounded Airacobra pilot 2Lt David Hoyer in the legs. Badly bleeding from fractures, Hoyer was lifted from the cockpit once back at Port Moresby, where his fighter was written off.

Encouraged by the apparent security offered by the Airacobra escort of July 24, another A-24 mission against the beachhead and shipping was flown on the 29th. Eight dive-bombers duly departed 7-Mile airfield and crossed the mountains, with 20 Airacobras (ten apiece from the 80th and 40th FSs) ranged on either side of them – a seemingly substantial escort. One of the A-24s soon turned back with engine trouble, and as the remaining aircraft climbed, the Airacobra and A-24 pilots "jockeyed" their throttles to try and maintain formation. However, marginal visibility resulted in many of them becoming separated from each other.

During the descent towards the target area, turbulence shook loose the bomb slung underneath one of the A-24s. Strict radio silence was maintained throughout, and as the dive-bombers emerged into semi-hazy weather, only four Airacobras could be seen some way off in the distance. Flying above a light overcast, from their vantage point at 7,000ft the A-24 crews could easily discern their targets – a merchantmen and warships at anchor ahead.

Lt(jg) Joji Yamashita, who was leading the fifth Zero-sen patrol to depart Lae that morning, was the first to sight the diving A-24s. A persistent and efficient aerial engagement subsequently resulted, with Tainan Kokutai records showing that the Yamashita's Chutai engaged ten "SBDs" escorted by four P-39s. The IJNAF correctly claimed five "SBDs" and, incorrectly, one P-39 destroyed. The sluggish and poorly armed A-24s proved no match for the A6Ms, resulting in a decisive Japanese victory. Notably, the small number of escorting Airacobras were ignored by the aggressive Zero-sen pilots, who focused their attentions exclusively on the vulnerable A-24s.

Tainan Kokutai pilots gather in front of the command post at Lae airfield for a group photograph in July 1942. They are, standing, from left to right, FPO3cs Tadashi Nakamoto and Sadao Uehara, FPO2cs Ichirobei Yamazaki, Shigetoshi Kudo (C5M pilot) and Eisaku Shimizu (C5M pilot), FPO3c Yutaka Kimura, FPO2c Ichiki Toshiyuki and FPO3c Kiyoshi Nakano. Sitting, from left to right, are unidentified, Sea1c Ken'ichiro Yamamoto, Lt Cdr Tadashi Nakajima, WO Tora'ichi Takatsuka and FPO1c Hiroyoshi Nishizawa. All of the pilots, bar unit CO Lt Cdr Nakajima, are wearing standard issue kapok lifejackets.

THE MODEL 32 ARRIVES

On July 29 the merchantman *Nisshin Maru No 2* docked at Rabaul laden with 20 crated A6M3 Model 32s for the Tainan Kokutai, with a follow-up consignment of 15 Model 32s arriving at Lakunai on August 6 on board the aircraft carrier *Unyo* for the 2nd Kokutai. This latter consignment was historic for until now the only Zero-sen that Airacobras had fought in New Guinea skies had been assigned to the Tainan Kokutai. Formed on May 31, 1942 and led by Cdr Sakae Yamamoto, the composite 2nd Kokutai, equipped with Zero-sen and D3A1 "Val" dive-bombers (all of which bore the tail prefix "Q") were now committed to combat.

Four days prior to *Unyo* reaching Lakunai, Lae-based Zero-sen flew five convoy escort missions. Loitering in the area mid-morning was the Sasai Chutai, which again was comprised of a cadre of experienced pilots – the second shotai was led by WO Tora'ichi Takatsuka and the third by FPO1c Saburo Sakai, both of whom were aces.

New in-theater were three Tainan Kokutai twin-engined J1N1-C "Irving" land-reconnaissance aircraft, which had recently started operating alongside their "Babs" reconnaissance counterparts. WO Tamotsu Tokunaga had taken off in his J1N1-C that morning on his third operational sortie to reconnoiter the Owen Stanley Range. Unluckily for him he encountered, and was shot down by, a gaggle of Airacobras that had lost five Marauders they were meant to be escorting in an attack on an IJN supply convoy. Credit for destroying the "Irving" was awarded to 2Lt Elbert Schinz.

Twenty minutes later, Sasai's pilots in turn bounced the three 41st FS Airacobras that had recently downed Tokunaga's "Irving." In an uneven fight, the Zero-sen dispatched two P-400s. 1Lt Jess Dore was last seen being chased (in AP290), and it is likely he was shot down into the sea. The fate of 1Lt Jesse Hague, however, remains obscure. After bailing out of BX232, he made his way to the coastal village of Ambasi, where he joined a mixed group of downed American aviators, Australian soldiers, and Gona Anglican Mission staff. They escaped inland, where an armed Hague was last seen distracting Japanese soldiers away from the group. After the war, graves of men from this group, who had subsequently been beheaded on Buna Beach on August 12, were identified. Hague's remains were not among them, however, and he is still listed as Missing in Action.

The jubilant Zero-sen pilots claimed six Airacobras following this encounter, expending nearly 6,000 rounds of ammunition in the process. The circumstances of the morning's engagements reflect the pride felt by aviators serving with the Lae wing at this time. The Tainan roster shows that a number of its key pilots flew two extended patrols on August 2, including Lt(jg) Joji Yamashita, FPO2c Ichirobei Yamazaki, FPO1c Mototsuna Yoshida, and FPO2c Yoshisuke Hoshiya. Such missions tested human resolve and endurance in an operational environment where back-to-back sorties, even for the healthy, were more than demanding.

By this stage in the campaign Lae's fighter pilots were all fatigued, and their relief was palpable the following day when the entire wing was ordered back to Rabaul in order to commence operations against "Rabi" – the Japanese name for Milne Bay, on the southeastern tip of New Guinea. As a result, few of these men would encounter an Airacobra again. However, shortly after returning to Rabaul, pilots from the Tainan Kokutai would be diverted to the Guadalcanal campaign instead.

Dubbed the "Richthofen of Rabaul", Lt(jg) Jun'ichi Sasai was one of the most successful pilots in the New Guinea theater in 1942. Routinely leading his Sasai Chutai (which included such high-scoring aces as Nishizawa, Sakai and Ota) into combat over Port Moresby, he was officially credited with 27 victories – Sasai had claimed that he had downed twice that number in a letter he wrote home in August 1942. Joining the Tainan Kokutai in the autumn of 1941 after completing his flying training, Sasai made his first victory claim on February 3, 1942 following an engagement over Java. After surviving many months of action over New Guinea, Sasai failed to return from a mission to Rabaul on August 26, 1942, having fallen victim to F4F-4s of VMF-223.

On the morning of August 4 the 39th FS lost its CO, Maj Jack Berry, in a training accident. He had taken off in an Airacobra toting a single 250lb bomb for a practice run against a shipwreck near Daugo Island, the vessel serving as a target for Allied airmen. The crew of an AA battery on a hill above Port Moresby saw an unidentified object detach from Berry's P-39F, which then crashed into the ocean about half-a-mile offshore. That same morning Tainan Kokutai Zero-sen participated in the first attack against "Rabi."

After a lull of just over two weeks, with the IJNAF concentrating on "Rabi" and Guadalcanal during that time, Japanese bombers again struck at Port Moresby on August 17. This raid resulted in the Allies suffering their largest single-day losses in aircraft on the ground, primarily as a result of complacency by personnel at 7-Mile Drome. A substantive combined force of 25 "Betty" bombers from the 4th Kokutai and the Misawa Kokutai were escorted by 22 Zero-sen from Rabaul, the fighter formation consisting of 12 A6Ms from the Tainan Kokutai and ten from the 2nd Kokutai. Lt Inano Kiku'ichi led the 1st Chutai and Lt(jg) Jun'ichi Sasai the 2nd.

As the formation headed for 7-Mile Drome, an eclectic collection of Allied transport aircraft that should have been dispersed was neatly lined up alongside the airfield's runway, ready for combat loading. Bombs hit the airplanes mid-morning, after which "Betty" crews submitted that they had destroyed six enemy aircraft on the ground. By 0923 hrs the IJNAF formation had left the target area, uncontested by Port Moresby's Airacobras. With the Allies sorely lacking transport aircraft at this critical stage in the defense of New Guinea, the loss of a DC-5 and two C-56 Lodestars was keenly felt. A DC-2, a DC-3, and two C-53s were also badly damaged.

The returning Japanese bombers were confronted by a massive weather front as they headed north, preventing them from reaching the southern coast of New Britain. Prudently, most crews diverted to Lae, rather than dueling with the weather. However, the Sasai Chutai was forced to escort several bombers that decided to press on for Rabaul. This combined formation eventually broke up in poor visibility south of New Britain. When approaching Gasmata airfield, most of the Sasai Chutai turned back for Lae, leaving FPO2c Masayoshi Yonekawa and FPO2c Tokushige Norio to continue with the "Bettys" to Rabaul. Yonekawa landed at Lakunai in the early afternoon but the unfortunate Norio disappeared without trace.

The following day, six Lae-based A6M2s on a routine patrol became the first aircraft to land at the newly built Buna strip, where they overnighted before returning to Lae. Zero-sen combat air patrols (CAPs) continued throughout August over Buna, although flight operations briefly ceased on the 21st to allow groundcrews to conduct badly needed maintenance on the fighters. The following day Allied reconnaissance aircraft photographed no fewer than 40 Zero-sen on Lae Drome – 30 new aircraft from the 2nd Kokutai and the remainder from the Tainan Kokutai.

On August 23 a detachment of eight Zero-sen from the latter unit flew to Buna, while 16 "Vals" from the 2nd Kokutai were transferred to Lakunai. A forward detachment of D3A1s arrived at Buna two days later. The Tainan Kokutai's Buna detachment operated concurrently with eight aircraft from the 2nd Kokutai, this unit being exclusively equipped with Model 32s. No more than ten Tainan Kokutai Zero-sen were ever based at Buna at any one time, the majority of the aircraft being new A6M3s.

After being refueled at Buna, all eight fighters from the Tainan Kokutai – led by hikotaicho Lt Cdr Tadashi Nakajima – took off for Milne Bay, along with an identical number from the 2nd Kokutai. The next day (24th), a shotai of Tainan Kokutai Model 32s, led by Lt(jg) Takeyoshi Ono, again headed for Milne Bay with two fighters from the 2nd Kokutai. Marginal weather (which blighted the area for much of August) near Normanby Island forced their early return, however.

Although heavy rain swept Port Moresby's airfields on August 26, eight P-400s from the 80th FS took off from 12-Mile Drome at first light and headed for Buna. Their pilots planned to overfly the northern coast before doubling back in an attempt to catch the IJNAF by surprise. Two Airacobras aborted after takeoff due to mechanical problems, with one of these fighters being flown by squadron CO, Capt Phil Greasley. He turned the flight over to 1Lt Bill Brown, using hand gestures in order to maintain radio silence. Back at 12-Mile, Greasley's groundcrew confirmed that electrical problems had shorted his gun solenoids. On Brown's wing, future ace 2Lt Danny Roberts maintained radio silence even though his new leader was taking them eastwards towards Milne Bay, instead of northeast in the direction of Buna. His patience finally exhausted, Roberts broadcast the navigational error, whereupon Brown immediately changed course.

Approaching Buna in a steep descent at 0725 hrs, the six Airacobra pilots found opportune and easy targets – six Zero-sen taking off in two separate formations, consisting of WO Kazuo Tsunoda, FPO1c Ki'ichi Iwase, and FPO3c Daizo Ihara from the 2nd Kokutai and Tainan Kokutai pilots Lt(jg) Joji Yamashita, FPO2c Ichirobei Yamazaki, and FPO3c Kiyoshi Nakano. These aircraft were immediately set upon by the USAAF pilots, who focused their attack on the barely airborne trio from the 2nd Kokutai.

Brown and Roberts peppered the Zero-sen flown by Iwase and Ihara, who were killed when their fighters burst into flames and crashed. Following closely behind them, 2Lts George Helveston and Gerald Rogers fired into the remaining trio of A6Ms, killing Nakano. Brown and Roberts pulled up steeply and doubled back in order to attack the climbing Japanese fighters head-on, followed by Helveston and Rogers and 2Lts Leonidas Mathers and Noel Lundy. Tsunoda force-landed his damaged A6M3 at Buna shortly thereafter, having fired exactly 100 rounds at his attackers. Although he escaped without wounds, his Zero-sen (tail code Q-102) was abandoned at the airstrip and later captured by the Allies. Wounded Tainan pilot FPO2c Yamazaki returned to Buna ten minutes

The salvage yard at 7-Mile Drome, seen here in November 1942, was located to the airfield's southwest. Two engineless ex-36th FS P-400s, an A-24 Banshee and a C-56 Lodestar that has been stripped of its outer wings and tail surfaces can be seen. In the foreground is a two-man air raid shelter, ringed with sand bags, for the sentries charged with guarding this remote corner of the airfield.

On August 27, 1942 the 19th BG B-17E flown by Capt Fred Eaton was attacked by Lt(jg) Joji Yamashita, whose A6M2 sported twin red buntaicho sashes on its fuselage. Having failed to destroy the Flying Fortress, Yamashita led his chutai in a strafing attack on anti-aircraft positions at Gurney Field in Milne Bay and was duly shot down by Australian soldiers.

after Tsunoda had force-landed, and he was later evacuated to Rabaul and medically repatriated to Japan.

During the final pass Rogers' P-400 BW112 sustained AA hits, and the pilot immediately headed away from Japanese-occupied territory and ditched offshore Pongani village. Although several Zero-sen strafed him as he clambered from the cockpit, Rogers avoided harm by duck-diving every time they approached. Villagers eventually rescued the soaked Rogers and fed him, before escorting him on a lengthy walk to Wanigela, where there was an Anglican mission and an eventual airlift home.

In a further blow to the IJNAF on what proved to be a black day for Japanese naval aviation, high-scoring ace Lt(jg) Jun'ichi Sasai was shot down over Guadalcanal by F4F-4 Wildcats of VMF-223. A veteran of 76 missions with the Tainan Kokutai, he had claimed 54 victories (and been officially credited with 27) by the time of his death.

With Port Moresby recently reinforced following the arrival of additional B-26s, USAAF commanders planned a two-pronged attack against Buna and Milne Bay on August 27. First to take off was the Buna-bound force of seven 19th BS Marauders escorted by 16 Airacobras from the 41st FS. A second formation of 12 B-26s would follow the Buna attack, striking enemy shipping in Milne Bay – shortly after dawn, these aircraft were joined by 16 more Airacobras over Port Moresby. Passing over the Owen Stanley Range, two flights of four Airacobras closely guarded the bombers heading for Buna, with eight more fighters slightly above the formation at 18,000ft. Encountering dense cloud, the B-26s and their escorts descended to 6,000ft over the coast and then turned left in the direction of Buna airfield. There, they would meet the first Zero-sen CAP of the day, consisting of a shotai from the Tainan Kokutai that had launched just before dawn. The three fighters, flown by Lt(jg) Takeyoshi Ono, FPO3c Takeo Matsuda, and FPO3c Sadao Uehara, had been circling over Buna for 90 minutes before they sighted the enemy formation at 0720 hrs. Zero-sen from the 2nd Kokutai remained on the ground.

The leading formation of the Airacobra escorts hit the Zero-sen shotai hard from head-on, the USAAF pilots duly claiming five fighters shot down – two victories were awarded to 2Lt Edwin Jackson, with Capt Jack Wilson and 2Lts William Turner and Francis Piggins getting one apiece. A second CAP of four Zero-sen, meanwhile, attempted to attack the Marauder force as they dropped their bombs from 1,500ft whilst being targeted by light AA. Plt Off Robertson, a seconded RAAF Marauder co-pilot, later wrote:

> Just as we arrived six Zeros started in to attack us but the Airacobras attacked on our right side and almost immediately one Zero crashed into the sea. So we bombed with no opposition. On turning out to sea after dropping we could see the Airacobras strafing the place and two ships. A Zero had an Airacobra on its tail and suddenly the Zero exploded and started to burn and went dull red and went straight in and ploughed under the water like a torpedo, kicking up great spouts of water. The same pilot, [Capt Jack] Wilson, got both Zeros and then developed engine trouble and we furnished protection for him. These were the first pursuits [fighters] we had had on any raid and it certainly was the goods.

Despite the confident claims by the Airacobra pilots, only FPO3c Takeo Matsuda was in fact shot down. That same day, however, the Tainan Kokutai lost four more Zero-sen pilots to RAAF Kittyhawks and ground fire at Milne Bay.

On August 31 2Lt Charles Cobb of the 80th FS bailed out of P-400 BX147 near the village of Kosipe, in the Kokoda area, following engine failure whilst escorting B-26s. It took him nearly a month to return to Port Moresby, guided by villagers. The following day, squadronmate 2Lt George Helveston was also forced to take to his parachute when P-400 BX146 suffered similar engine problems shortly after taking off on a patrol from Durand Drome – the fighter crashed just a mile from the strip. The 80th FS lost another aircraft on September 6, and this time its pilot was killed. Capt Francis Potts was dive-bombing the Japanese-held area around Lake Myola during a mid-morning attack when his P-400 (AP359) was hit by ground fire and he bailed out too low. He still remains missing in action to this day.

Although the Guadalcanal campaign had by now become the primary focus for Rabaul's Zero-sen, on September 7 the Tainan Kokutai was ordered to escort "Betty" bombers targeting Port Moresby – the first such mission in nearly three months. This operation also saw the 6th Kokutai make its combat debut over Port Moresby, the unit's Zero-sen having arrived at Rabaul on August 21. A force of 26 A6Ms was duly dispatched, with the differing cruising speeds of the fighters and bombers meaning that coordinated, staggered, departures had to be undertaken from Vunakanau and Lakunai airfields. At 0800 hrs, six Chitose Kokutai G4M1s took off, and they were joined 90 minutes later by 17 Tainan Kokutai Zero-sen led by hikotaicho Lt Cdr Tadashi Nakajima, followed thereafter by nine fighters from the 6th Kokutai, led by Lt Mitsugu Kofukuda.

The Zero-sen arrived overhead Port Moresby before the bombers, forcing pilots to circle at high altitude while they waited for the "Bettys." Clearly, there was a coordination problem. Just after midday, the G4M1s finally started their bombing run against 7-Mile Drome, and five minutes later the Tainan Kokutai Zero-sen joined them for the return journey. The 6th Kokutai fighters headed separately for Rabaul, there having been no Airacobras sighted by either unit. That day, most of Port Moresby's P-39s and P-400s had been deployed in support of the Milne Bay operation. Nonetheless, Japanese bombs destroyed two Airacobras on the ground and damaged several more. This raid was the last time Zero-sen returned to Port Moresby in 1942.

September also saw the 3rd Kokutai deploy its Zero-sen to Rabaul from bases in Timor in an attempt to supplement Japanese efforts against Guadalcanal. Twenty-one of its A6Ms, 27 pilots, and four C5M reconnaissance aircraft were transported to Rabaul on board the carrier *Taiyo*, and once at Rabaul the unit was placed under the command of the Tainan Kokutai. Its deployment to Lakunai was brief, however, the 3rd Kokutai returning again to Timor in early November 1942 without having encountered any

Taken at Rabaul in mid-October 1942, this is the last known photo of the 2nd Kokutai's leadership cadre before the unit was redesignated the 582nd Kokutai. Seated in the front row, from left to right, are WO Wada (possibly chief engineer), WO Yoshio Wajima, Lt Yoshio Kurakane, Lt(jg) Tokitane Futagami and WO Kazuo Tsunoda. The identities of the remaining personnel are unknown.

56th FS P-39D-1 41-38359 *Leura* was assigned to 2Lt Irving Erickson (right – note that he is wearing a throat microphone) when it was photographed at Kila Drome with crew chief Sgt E. A. Matteo during the early summer of 1942. The fighter was later transferred to the 36th FS and allocated to 1Lt George Welch, who renamed it *MISS HELEN the FLYING JENNY*. He used the aircraft to claim two D3A1 "Vals" and an A6M destroyed northeast of Buna on December 7, 1942 – these official successes made Welch an ace.

Airacobras – pilots from the unit were credited with 48 victories over Guadalcanal, however.

On September 21 Airacobras from the 35th and 36th FSs deployed to Milne Bay to relieve the RAAF's Kittyhawk-equipped Nos. 75 and 76 Sqns in much the same way that these two USAAF units had been sent to Port Moresby five long months earlier to relieve No. 75 Sqn.

The next operational losses suffered by the Airacobra force in New Guinea occurred on November 1 when the 41st FS dispatched a handful of fighters from 7-Mile Drome at noon as escorts for three USAAF C-47s bound for Pongani airfield. Led aloft by unit CO Capt Edward Doss, the formation encountered a weather front with a low cloud-base and tops at 28,000ft when they attempted to return home. Both 1Lt Thomas Ingram and 2Lt Joel Zabel, flying P-400s AP367 and AP266, respectively, were last seen entering the overcast and they failed to return.

Following the conclusion of the Kokoda campaign with the withdrawal of Japanese troops on November 16, Allied forces immediately started pressing dug-in enemy strongholds in the Buna area. The IJNAF duly countered this offensive by mounting two raids there six days later, targeting Allied positions with dive-bombing attacks by six "Vals" from the 582nd Kokutai (formerly the 2nd Kokutai). Six Zero-sen from the same unit, along with an identical number of A6Ms from the recently arrived 252nd Kokutai, escorted the D3A1s. All had departed Rabaul at 0730 hrs, and shortly before 1000 hrs the Japanese fighters engaged ten enemy aircraft while the "Vals" headed for Cape Ward Hunt in search of Allied shipping. Finding none, they bombed and strafed a village near Buna beach instead. The combined 582nd Kokutai contingent landed at Lae at 1150 hrs without having engaged the enemy on land or in the air.

Meanwhile, the six 252nd Kokutai Zero-sen had fought Airacobras for 20 minutes until the dogfight broke up at around 1100 hrs. Chief Flyer Tomio Maeda was credited with two P-39s as probables during this encounter, although he was himself listed as missing in action. The same Zero-sen also attacked a C-47 transport as they were withdrawing, landing at Lae at 1220 hrs. Maeda had in fact shot down P-400 BW105 flown by 41st FS pilot 1Lt Herbert Hill at 1020 hrs, the USAAF pilot being forced to take to his parachute directly over Buna airfield. It was presumed that he had been taken prisoner as soon as he landed and almost certainly executed. Like the man that shot him down, Hill also remains Missing in Action.

In early December the 41st FS received a handful of brand new P-39Ks, two of which were lost to weather on the 16th when four Airacobra pilots patrolling the Cape Ward Hunt area were confronted with a solid overcast when they tried to get home. Although two diverted to Dobodura after running low on fuel, 2Lts Robert Tucker

(in 42-4362) and Alexander Currie (in 42-4346) pressed on for Port Moresby, climbing to 18,000ft. Tucker flew ahead of Currie and was never seen again, whilst the latter eventually lost control of his Airacobra in the worsening weather and entered a spin. He exited the cloud base at 1,500ft in a valley and bailed out, spending the next six days following a stream towards the coast. Currie was duly found by villagers, who carried him to Popondetta.

Two more Japanese raids were conducted against the Buna area on the first anniversary of the attack on Pearl Harbor. The first strike was engaged by 16 Airacobras from the 35th, 36th, and 40th FSs, which had taken off from 12-Mile during mid-morning. Although two fighters aborted, the rest approached Buna at 8,000ft. They soon spotted "Val" dive-bombers and Zero-sen escorts below them at 6,000ft. 1Lt John Casey of the 35th FS fleetingly attacked an A6M and then went after a "Val" in a diving stern attack. 36th FS pilots 1Lts Howard Peterson and George Welch (who had claimed four IJNAF aircraft destroyed in a P-40B over Pearl Harbor at short notice whilst still in formal mess attire) attacked a pair of unprotected "Vals" and claimed both.

The engagement lasted ten furious minutes, commencing at 1030 hrs. The Airacobra pilots had clashed with six Rabaul-based D3A1s escorted by 11 A6Ms, all the IJNAF aircraft being assigned to the 582nd Kokutai. Zero-sen pilot FPO2c Nao Uematsu went missing during this action, having almost certainly been chased inland by an aggressive Welch, before turning back in the direction of the coast and eventually crashing. Separated from his squadronmates, no one witnessed Uematsu's demise. Afterwards, several Zero-sen refueled at Surumi (Gasmata) on the way home to Rabaul, where one pilot was treated for serious wounds. Another "Val" was destroyed at Salamaua when its wounded pilot crash-landed. At Rabaul, it was discovered that two more "Vals" and another Zero-sen had sustained combat damage. The only damage suffered by the USAAF fighters in return was a single bullet hole in the aircraft flown by 40th FS's 2Lt John Watson, placed there by a "Val" rear gunner.

Following this combat Welch was credited with two "Vals" and a Zero-sen, thus giving him the first triple victory claim by an 8th FG pilot. This haul also made him the group's premier ace. Although the Airacobra pilots were awarded 11 kills for the mission, the IJNAF only had two "Vals" and a Zero-sen shot down.

The lively, but one-sided, clash on December 7, 1942, proved to be the final action of the year between the Airacobra and the Zero-sen.

P-400 BX-163 *HELEN* of the 80th FS suffered a taxiing accident at Kila Drome on December 24, 1942. The sharksmouths worn by Airacobras assigned to this unit were individually applied, which in turn meant that they all had their own unique artistic characteristics. This ferocious, and distinctive, unit marking was only seen during the 80th's first combat tour in New Guinea.

STATISTICS AND ANALYSIS

With the advantage of unfettered postwar access to both sides of the Airacobra versus Zero-sen ledger, it is a fact that the USAAF and the IJNAF grossly over-claimed. With so much invested in the prestige of numbers (particularly "ace" status for American pilots), the reality of actual kills is set to disappoint. We see occasions where Allied pilots were positive of a victory, only for the record to confirm that their quarry cruised home unscathed. There are explicable reasons behind this.

Japan's ranking ace, Hiroyoshi Nishizawa was serving with the Chitose Kokutai when the conflict commenced in the Pacific. After flying uneventful air defense patrols in the Marshall Islands for almost two months, he was posted to the 4th Kokutai in early 1942 and then sent to Rabaul on detachment. Here, Nishizawa claimed a flying boat (an RAAF Catalina, whose loss cannot be substantiated) at night for his first victory on February 3. He was subsequently assigned to the Tainan Kokutai, flying his first mission with the unit on April 14, 1942. Heavily involved in the fighting over New Guinea and Guadalcanal, Nishizawa had been credited with 30 confirmed victories by the time his unit was sent back to Japan in November 1942. Returning to Rabaul with the 251st Kokutai in May 1943 and transferring to the 253rd Kokutai four months later, he continued to add to his tally of victories. Returning to Japan in October of that year, Nishizawa was posted to the 203rd Kokutai and saw action in the Kuriles and over the Philippines until his death in combat on October 26, 1944. Officially, his final score was recorded as between 60 and 70 victories, although Nishizawa mentioned 86 to the hikotai leader of the 253rd Kokutai when he was evacuated from Rabaul.

Combat was fleeting, the norm being an encounter that typically lasted less than a minute and saw only a few hundred rounds fired. Infamously lacking self-sealing tanks, Zero-sen were either abruptly removed from the sky in flames or suffered minor, inconsequential hits. Few casualties fell between these two extremes. The Airacobra could sustain more damage for it had both self-sealing tanks and armor plating, saving more lives than the record reflects. The "kill" ledger

underlines the certainty that it was much harder to place hits on an enemy aircraft than is often appreciated. In such a fluid, fast-moving, and dangerous environment, it is easy to see how several pilots could claim the same victim.

George Welch was the first pilot to 'make ace' whilst serving with the 8th FG, claiming three victories on December 7, 1942 to add to the four kills he had recorded over Pearl Harbor in a P-40B exactly one year earlier. By the time he had ended his combat tour with the 8th FG in September 1943, Welch had increased his tally to 16 victories – his remaining nine kills were scored in the Lightning. Employed as a test pilot by North American Aviation from 1944, Welch was killed in a flying accident on October 12, 1954.

Ace FPO2c Ichirobei Yamazaki had been posted to Rabaul in February 1942 as part of the 4th Kokutai detachment that included Hiroyoshi Nishizawa, having previously been assigned to the Oita Kokutai at the start of the Pacific War. In April he transferred to the Tainan Kokutai, after which Yamazaki found himself in the thick of the action over Port Moresby, Buna, Lae and Rabaul. On August 16 he was badly wounded and evacuated to Japan. Posted to the 251st Kokutai in May 1943 after his recuperation, Yamazaki returned with the unit to Rabaul and was killed in action on July 4 that year over Reondova Island. By then he had been officially credited with 14 aircraft shot down, including at least two Airacobras.

Both sides principally judged their performance by such combat claims. This simple but understandable system ignored qualitative and strategic factors. The raw numbers of Japanese losses alone, exponentially less than the Allies calculated, do not properly convey the key qualitative impact the death of experienced pilots had on the IJNAF. Behind every Airacobra pilot lost in New Guinea were growing queues of replacements being churned out in America by the USAAF's rapidly expanding Training Command. Furthermore, more than half the Airacobra pilots shot down would again take to the skies, made wise by their near-death experience.

In 1942 in New Guinea a total of 44 Airacobras was lost in combat compared to just 15 Zero-sen, constituting a loss ratio of almost three-to-one. However, slightly more than half of the USAAF fighter pilots shot down parachuted to safety and flew again, whereas only one Zero-sen pilot survived and was captured. Operational Airacobra losses totaled 14, whilst 13 Zero-sen fell to the same cause – an almost equal toll reflecting the harsh tropical conditions faced by both sides.

Airacobra pilots were officially credited with the destruction of 95 Zero-sen against the true total of 15. In other words, for every 6.3 kills claimed by USAAF fighter pilots in-theater in 1942, only one actually occurred. A similar ratio existed within the IJNAF in respect to the number of aircraft its fighter pilots claimed versus actual Allied losses.

There are valid reasons behind such over-claiming. All combat unfolded in humid skies, more so in the morning. This meant that G-forces produced by tight turns produced vapor trails, which were easily confused with smoke. Optimism wins over reality in a treacherous environment, and New Guinea's wartime skies were no exception. Furthermore, many USAAF pilots entered confirmed kills in their log books, only to find in postwar years that these were never officially recognized. Official documentation from the early fighting in New Guinea is deficient, complicated by the loss of a Mitchell bomber off the coast of

Australia in late 1942 that was carrying priceless USAAF records pertaining to Airacobra operations in-theater.

The command structure under which all New Guinea-based Zero-sen pilots operated was clear-cut. The most identifiable leadership failing was high command acquiescence to allow A6M pilots to discard parachutes. Many valuable aviators could have been saved – WO Satoshi Yoshino on June 9, 1942 directly comes to mind. It is true that the decision to abandon parachutes was made by the Bali arrivals as early as mid-April 1942. However, this decision could have been countermanded by a more forceful high command. Saburo Sakai's memoirs further elaborate:

> Every man was assigned a parachute, and the decision to fly without them was our own and not the result of orders from any higher headquarters. Actually, we were urged, although not ordered, to wear the parachutes in combat. There was another, and equally compelling, reason for not carrying the chutes into combat. The majority of our battles were fought with enemy fighters over their own fields. It was out of the question to bail out over enemy-held territory, for such a move meant a willingness to be captured.

Of the 44 Airacobras lost in combat in 1942, only 15 were shot down by Zero-sen. The following scores have decimals in them as it was IJNAF policy to share victories across the board. Thus, if ten participants shared in the destruction of a single aircraft, each pilot was awarded 0.1 of a kill. The top five IJNAF Zero-sen pilots credited with Airacobra victories in 1942 are as follows:

FPO1c Hiroyoshi Nishizawa – 3.1
FPO1c Toshio Ota – 2.6
FPO2c Ichirobei Yamazaki – 2.1
FPO1c Saburo Sakai – 2
WO Sahei Yamashita – 1.8

FPO1c Toshio Ota was involved in an unofficial "ace race" with Saburo Sakai and Hiroyoshi Nishizawa during 1942 over New Guinea, being officially credited with 34 victories by the time he was killed in action over Guadalcanal on October 21 that year. Transferred from the 12th Kokutai to the Tainan Kokutai in October 1941, he had seen action over the Philippines and the Dutch East Indies. Ota's first victory came on December 8, 1941, and he was wounded by return fire from a USAAC B-17 over Balikpapan, Borneo, the following month. In April 1942 he commenced a period of great aerial success as operations over New Guinea increased in tempo, and he was heavily involved in missions to Port Moresby. Ota claimed at least 2.6 Airacobra victories.

As previously noted, the USAAF credited its Airacobra pilots with 95 Zero-sen victories in New Guinea in 1942. In reality, they actually shot down 15 A6Ms – a total identical to the number of Airacobras lost to the A6M. Some of these victories cannot be attributed with certainty to individuals, as in most engagements a number of pilots claimed the same aircraft. After apportioning victories where appropriate, the top-scoring Airacobra pilots in respect to confirmed Zero-sen kills are as follows:

1Lt Donald McGee – 2.4
1Lt William Bennett – 1
1Lt Curran Jones – 1
1Lt Francis Royal – 1
Lt Col Boyd Wagner – 1

AFTERMATH

After extensive use in the New Guinea theater, several Fifth Air Force P-400s were overhauled in October 1942 and sent to Guadalcanal to serve with the Thirteenth Air Force. Several P-400 survivors operated in New Guinea well into mid-1943 on active service. For example, 41st FS pilot 2Lt Roy Owen claimed a G4M1 during the substantive April 12, 1943 Port Moresby raid flying BW128. The 35th FG was by then operating a mixture of P-400s, P-39D-1s, and P-39Qs, all equipped with the 20mm cannon. The 36th FS continued to operate the P-400 the longest, with AP335/347/355 and 357 being lost in New Guinea on operations as late as August 1943. Despite being a P-38 Lightning unit, the 39th FS kept a solitary P-39D on its books at Port Moresby until May 1943 for training purposes.

Although there were brief oscillations of fortune for both sides, clear victory was never within grasp of Airacobra or Zero-sen units. From May 1942 onwards the triangle of sky overhead the New Guinea towns of Lae, Rabaul, and Port Moresby witnessed a "slugfest," showcasing the conflict of these two types. During the aerial battles fought during this period the Zero-sen pilots at first "knocked" their Australian counterparts flying Kittyhawks "out of the ring," only for Airacobra units to seamlessly take their place. There was

Taken after the capture of Lae in September 1943, these wrecked A6M2/3s are from the 2nd, 4th, 582nd and Tainan Kokutai.

little respite for P-39 and P-400 pilots until growing Allied aerial opposition started wearing down the increasingly thinly spread Zero-sen units. In August 1942 the distractions of the Guadalcanal campaign curtailed the Japanese offensive against Port Moresby, giving the Allies in New Guinea more space in which to expand and consolidate air power.

The Airacobra remained in service in New Guinea throughout 1943, with units deploying P-39Ns and P-39Qs on combat missions and routine patrols. By then, however, it had been superseded as a fighter by the P-47 Thunderbolt and P-38 Lightning. Nevertheless, the Airacobra was still widely used in-theater into mid-1944, but only in the ground attack role specifically with the 71st Reconnaissance Group's 82nd and 110th Reconnaissance Squadrons. These units had arrived in Port Moresby in December 1943 to take up their role, the pilots from both squadrons initially being assigned to the 35th FG in order to gain area familiarization and combat experience. First based at Schwimmer and Durand Dromes, they departed the Port Moresby area in late December 1943 and headed for new stations at Nadzab, Dobodura, Saidor, Finschhafen, and Gusap. The 110th later moved to Tadji in May 1944 (by which point it had been redesignated a Tactical Reconnaissance Squadron), where it stayed for three months, after which the unit moved to Biak.

The pilots quickly discovered that low-level flying was completely different to aerial combat, particularly over thick jungle that concealed all but the most obvious targets. Missions were primarily designed to harass and contain Japanese breakouts that continually threatened Allied air bases. When undertaking such operations, the Airacobras mostly conducted dive-bombing and strafing, but they also dropped surrender leaflets and target markers for Allied bombers, including RAAF Beauforts and USAAF A-20Gs. Targets attacked in New Guinea were usually found along the northern coast, mainly around troop concentrations at Madang, Alexishafen, Bogadjim, Wewak, and Tadji. The flying could be exhilarating, but it was also dangerous, with losses almost exclusively attributed to operational factors and adverse weather conditions.

The squadrons predominantly operated P-39N-5 and Q-5 models. The N-5 had the armor plating mounted behind the pilot in earlier models replaced by bulletproof glass, and it was equipped with an SCR-695 radio and updated oxygen system. The Q-5 had the wing-mounted 0.30-cal machine guns replaced with pod-mounted 0.50-cal weapons fitted under the wings on hard-points. Fuel capacity for both models was increased and Type A-1 bombsight adapters were also added. Many of these late model Airacobras also had K-24 and K-25 cameras mounted in the aft fuselage. Additional hard-points under the wings and fuselage enabled the aircraft to deliver one 500lb bomb or two 250lb bombs. For final effect, all models were equipped with the M4 37mm cannon that fired through the propeller hub, the weapon being manufactured by the Oldsmobile Auto Company. Although the M4 had a relatively slow rate of fire, pilots could accurately lead shells into a target via machine gun tracers.

The Zero-sen remained in service with the IJNAF in substantial numbers through to war's end, but after January 1943 it was rarely seen in the skies over New Guinea. The fighter was, however, used to escort bombers during the series of *I-Go* operations mounted against Port Moresby and Oro Bay in April 1943. The vast majority of Zero-sen in-theater were deployed en masse during the Solomons campaigns, with the focus of operations remaining at Rabaul. By April 1944 all Zero-sen had left the New Guinea and Solomons theaters.

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P-39 Airacobra cover art
On August 2, 1942 nine Lae-based Zero-sen from the 2nd Chutai ran into three 41st FS P-400s over Buna that had just shot down a twin-engined J1N1-C "Irving." This was an uneven fight, matching three fledgling American pilots against nine of Japan's best. One of the two victims was 1Lt Jesse Hague, whose fate remains obscure. After bailing out of AP377 he made his way to the coastal village of Ambasi, where he joined a group of soldiers and civilians trying to escape inland. Hague was last seen fighting Japanese soldiers to distract them away from the group. He remains Missing in Action. (Cover artwork by Gareth Hector)

A6M Zero-sen cover art
Buntaicho Lt(jg) Jun'ichi Sasai engages a 35th FG P-39D over New Guinea's northern coast in July 1942. Ace Sasai regularly flew A6M2 Zero-sen V-138, which had twin blue fuselage sashes and double fin stripes denoting his status as buntaicho of the 2nd Chutai. His deputy Lt(jg) Katsumi Kurihara also routinely flew this Zero-sen, in which Sasai was later killed over Guadalcanal on August 26, 1942. (Cover artwork by Gareth Hector)

Title Page
A Japanese raid against Buna on December 7, 1942 marked the last time P-400s fought Zero-sen in New Guinea. One of the aircraft involved in this historic clash was AP365, seen here with its pilot, 1Lt John E. Watson of the 40th FS, standing on the starboard wing root. It was the only USAAF fighter to be damaged during this one-side encounter, being struck by a single bullet fired by a "Val" rear gunner. The Airacobra's crew chief, Sgt Morin, is standing in the foreground.

Japanese term	**Definition**
hikotaicho	Leader of a kokutai
chutaicho	Leader of a chutai
buntai	Equivalent to a chutai but usually accompanied by a command status
buntaicho	Leader of a buntai
shotaicho	Leader of a shotai

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